

KNOWLEDGE SHARING AT STATE POLYTECHNICS IN INDONESIA

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Thesis

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Abstract

Knowledge Management is crucial for organisations, including government institutions like State Polytechnics (SPs) in Indonesia, to allow them to face challenges, competition, and to improve performance. The key of KM itself is Knowledge Sharing (KS) which drives KM. Therefore, it is important to assure that KS takes place and develops in State Polytechnics in Indonesia in order to compete with other High Educational Institutions. It is important to recognize the strength and weakness of KS at SPs which can be utilised to improve KS.

There was no information, however, which showed how KS occurred at SPs in Indonesia. Previous studies indicated in order for KS to happen, the inter-dependent relationship between motivations, nature of knowledge, and approaches to share knowledge was needed. Prior studies also demonstrated the influence of organisational factors on knowledge sharing. A great number of studies were even successfully showing culture as the most crucial influence. This study aimed at investigating these three elements mentioned earlier and the influence of organisational factors on KS at SPs in Indonesia. Therefore, this study conveyed a broad question, How does knowledge sharing occur at State Polytechnics in Indonesia with the first specific question: what knowledge is shared, what approach is used, and what organisational factors influenced the knowledge shared and the approach to share knowledge. The second specific research question was related to the motivations to share knowledge: what are the motivations to share knowledge and what organisational factors influence the motivation to share knowledge.

This study adopted a qualitative approach because this approach enables the researcher to better interpret the complexities and realities of given situations, enrich the understanding of the context and phenomenon under investigation, and because previous studies show that qualitative approach is the best approach to studying culture. Constructionism is the epistemological perspective in his study because constructionism provides the researcher the knowledge through the sharing of experience from participants which is co-constructed to represent the reality. The researcher used multiple case studies to help determine and assess the social life of participant experiences, roles, and motivations to share knowledge. The cross-case analysis is also conducted in order to find the similarities and differences on how the participants share knowledge.

Data were collected from Polytechnics on three islands with different subculture backgrounds in Indonesia (Kalimantan, Java, and Bali) using semi-

structured interview technique. Document analysis was also used to support the data gained from the interview. The interviews were conducted with four groups of participants: Top Managers, Middle Managers, Lecturer-Unit participants, and Lecturer-Teaching participants. The data was analysed through within-case analysis, which explored the participants' experiences and through cross-case analysis, to investigate the similarities and differences of the data from different groups and research sites.

This study revealed that not only knowledge sharing took place at SPs in Indonesia but knowledge transfer as well. What knowledge was shared depended on the motivations to share knowledge and the approaches used were dependant on what knowledge was shared. The motivations found in this study were rooted from reciprocity. The motivation was found as a crucial factor, but not the key for knowledge sharing. Motivation was seen as an initiator. The knowledge shared by participants was mainly related to their obligation as lecturers in Indonesia, responsibility as managers, and their expertise. The findings in this study also illustrated that the approach selected was a determinant factor. In an informal meeting, knowledge sharing mostly happened. In a formal sharing, however, without leaders' stimuli, knowledge sharing did not happen. Knowledge transfer did. Culture was found as the most influential factor in this study. Subcultures provided differences on the form of informal gatherings (surface culture). Meanwhile, national culture described the participants norms, ways of thinking, and ways how they saw themselves in sharing knowledge.

Declaration of Originality

I certify that this thesis does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

Signed:

A handwritten signature in black ink, appearing to be 'Nurul Fitriani', written over a horizontal line.

Nurul Fitriani

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CHAPTER ONE : INTRODUCTION

This study focuses on exploring knowledge sharing (KS) at State Polytechnics (SPs) in Indonesia. According to many authors, KS is the most important part of knowledge-management (KM) (Lee, 2018; Amalia & Nugroho, 2010; Andresen, 2007; Antonova, Csepregi, & Marchev, 2011; Chinowsky & Carrillo, 2007; Debowski, 2006; Erickson, Rothberg, & Carr, 2003; Ipe, 2003; Lin, 2007; Tian, Nakamori, & Wierzbicki, 2009; Van Der Velder, 2002). Effective KM influences organisational performance positively (Liao & Wu, 2009). In fact, Darroch (2005) claimed that KM is the antecedent of organisational performance. Kidwell, Vander and Johnson (2000) have argued that it is important for higher education institutions to use KM to improve their quality and performance in order to compete successfully in the open market. It seems clear that effective KM is a crucial factor for success in higher education (Aulawi, Sudirman, Suryadi, & Govindaraju, 2009).

The success of knowledge-management itself depends on the willingness of members to share knowledge (Lin, 2007). By enhancing knowledge sharing, knowledge itself is more likely to be beneficial to the organisation. An organisation cannot achieve the benefit from knowledge acquisition unless the knowledge is shared (Song, 2002). Herrmann (2011) explains about barriers in knowledge management in an organisation in Africa. One barrier is that the members in an organisation do not understand the importance of developing knowledge management for the members themselves. Instead, they believe that not sharing knowledge may secure their job. According to Jain, Sandhu and Sidu (2007), Kumar (2005), and Ng (2008), in the education sector, the members of an institution must share knowledge to stay competitive. However, Knowledge Sharing (KS) is the most challenging part of Knowledge Management (KM) (Song, 2002; Todd, Birgit, & Kurt, 2006).

Despite the importance of KS highlighted in the literature cited above, no attention has been given to how the members of SPs in Indonesia share knowledge. Therefore, it is essential to investigate and reveal how the KS process takes place in SPs in Indonesia.

Background to the Study

Higher educational institutions (HEIs) are a source of knowledge since they play a key role in knowledge creation and transfer (Jain, Sandhu, & Sidu, 2006; Tian, Nakamori, & Wiersbicki, 2009) and, as such, should be a place where knowledge sharing occurs. As a type of HEI, SPs should also be institutions where knowledge attainment, sharing, and storing take place.

Universities and other higher educational institutions are in the knowledge business and are exposed to market pressure as are other businesses (Jahani, Ramayah, & Effendi, 2011). State Polytechnics in Indonesia also experience high competition in the marketplace as part of their significant role in Indonesian development. Mubtadi (2011) argued that HEIs in Indonesia play a vital part in providing high quality human resources that aid regional and global competitiveness.

Cambridge Education acknowledges the fact that polytechnics in Indonesia have significant functions in the technical and vocational education sector and in the employment market (Cambridge Education, 2011). The State Polytechnic in Indonesia is similar to the *Fachhochschule* (university of applied science) in Germany, as the *Fachhochschule* is a higher educational institution with programs focused on practice that will be used in a real work situation. The length of courses is normally three years [six semesters] (Oey, 2011). According to Gunawan (2013) and Politeknik Gunakarya Indonesia (2012), the teaching-learning processes of polytechnics have a greater focus on practice (60%-70%) than on theory (30%-40%). They emphasise entrepreneurship, comprehensive problem-solving, and the implementation of theories. Therefore, polytechnics in Indonesia fulfil their goals as HEIs do by providing graduates with academic and professional ability and with technological skills which are sought after in the work place.

Wartiyati (2001) conducted a case study in one of the State Polytechnics in Indonesia, which showed that the polytechnic had high quality staff and graduates. An Australian organisation (AusAID) was even keen to develop the status of polytechnics in Indonesia through The Second Indonesia-Australia Polytechnics Project (SIAPP), which was a collaborative venture with Indonesia in 1992-1996. AusAID understood that polytechnics play an important part in building the skill level in Indonesia (AusAID, 1998).

However, Politeknik Gunakarya Indonesia (2012) added that many high school graduates do not aim to enrol in a polytechnic as an option for further study. This is due to the fact that employers do not view polytechnic graduates in the same light as they do university graduates. Most employment classifieds or positions vacant in Indonesia require university graduates (bachelor degree) even for a low or entry level position. There continues to be an assumption in Indonesia that polytechnic graduates are not sufficiently qualified to fulfil the work demands of today. Therefore, according to the Director of Pontianak State Polytechnics, many polytechnic graduates such as those at the Pontianak State Polytechnic, continue their study to bachelor degree level in order to gain employment (Mahyus, personal communication, August 23, 2013).

State Polytechnics in Indonesia face challenges in order to compete with state universities and SP graduates compete with university graduates to get jobs. As a result, every year, SPs in Indonesia struggle to attract prospective students from local and international sources. Sometimes, in order to appeal to students, some SPs start student selection after the selection process has been completed by universities. Those who are not accepted by universities would usually enrol with SPs (Mahyus, personal communication, August 23, 2013).

The pressure on SPs to compete is strong and one means of increasing competitiveness is through increased knowledge sharing. Advocates of knowledge sharing portray it as an, "engine of economic growth and a source of competitive advantage" (Liebowits & Chen, 2003, p. 410). Organisations have been using information for years to improve the efficiency and effectiveness of their services. In addition, emphasis on competition has forced educational organisations to think like businesses (Ranjan, 2011).

Cheng, Ho, and Lau (2009) conducted a study in an HEI in Malaysia. They claimed that even though many KS studies focus on business organisations, KS is similarly important for HEIs and the result of KS will have an even greater competitive impact on the HEIs than on business organisations. Babalhavaeji and Kermani (2011), however, indicated there were differences on what knowledge was shared in High Educational Institutions. Nonaka and Takeuchi (1995) state that in a developing country, KS in HEIs plays a key role in KM since an individual's knowledge may not have much impact on the organisation unless it is shared with other individuals (cited in Jahani, Ramayah, & Effendi, 2011, p. 87). Therefore, HEIs as places where knowledge attainment, transfer, and storing occur should be places where knowledge sharing happens. Leaders in HEIs must emphasise KS so as to

improve their competitiveness in the higher education marketplace (Babalhavaeji & Kermani, 2011).

Statement of the Problem

There has been little research on KS in Indonesian HEIs; however, what little research has been conducted suggests that practices may vary considerably from those documented in western organisations (Bradshaw, 2011) and that little attention has been paid to KS by managers within SPs. For example, the procedures for staff development programs or activities, such as training or seminars, generally do not (officially) require staff to share the new knowledge within the organisation. Staff are (only) obliged to submit a report on the programs to the director (Mahyus, personal communication, August 23, 2013).

While there are minimal studies on KS in SPs, there are studies related to KM or KS in Indonesian organisations. Apostolou, Abecker, and Mentsas (2007) state that most of the research in KM has been carried out in industrial and service organisations. Tjakraatmadja, Martini and Wicaksono (2008) conducted a case study on KS at the *Institut Teknologi Bandung* (ITB). They found that the ITB had the potential to play an important role as a knowledge transformation hub in bridging academic, business, and government sectors to create value through KS among the participating actors. However, this study did not describe how the KS process itself occurs among staff members at ITB.

Organisations that do not have formal KS practices will fail to leverage their employees' intellectual capital which is needed for the organisation's innovation and development (O'Neill & Adya, 2007). A study conducted by Bradshaw (2011) suggested that KS in HEIs in Indonesia occurs in informal ways such as by developing a sense of what is termed communities of practice (p. 63) or storytelling (p. 68). Leidner, Alavi and Kayworth (2006) referred to this as a practice approach. Sallis and Jones (2002) argued that educational institutions could motivate staff to share knowledge through Communities of Practice (CoP).

Clearly, to attain a competitive advantage organisations need to focus on their knowledge sharing processes. Therefore, the current gap in the research and the scarcity of the literature on knowledge sharing between staff members who have significant differences in educational backgrounds, such as those in SPs in Indonesia, needs to be addressed.

Purpose of the Study

The purpose of this study is to explore the KS process at SPs in Indonesia by investigating the factors that motivate KS, what knowledge is shared at SPs, the SPs' approach to KS, the types of knowledge staff members share, and the organisational factors that influence the KS process. This study examines three SPs from three different islands in Indonesia, each with strong specific local cultures, in order to explore the potential differences that the context might make to practices.

Aims of the Study

The aims of this study are to investigate:

1. How Knowledge Sharing happens at State Polytechnics in Indonesia
2. The knowledge that is shared and how it is shared at three SPs in Indonesia
3. The factors that motivate the members at three SPs to share knowledge
4. The organisational factors that influence the knowledge shared and motivations to share knowledge at State Polytechnics in Indonesia

Research Questions

General question: How does Knowledge Sharing occur at State Polytechnics in Indonesia?

Specific questions:

1. What knowledge is shared at State Polytechnics in Indonesia, what approach is used, and what organisational factors influence the knowledge shared and the approach to share knowledge?
2. What factors motivate the Knowledge Sharing and what organisational factors influence the motivation to share knowledge?

Significance of the Study

The understanding of KS in educational organisations in Indonesia, especially in SPs, is in its early stages. According to Bradshaw (2011), few studies related to knowledge-management in HEIs and even fewer studies related to KS in Asian organisations have been carried out. Van der Velder (2002) may have clarified the

rationale. He said that the theory and research on knowledge-management are predominantly grounded in western understandings of knowledge and its role in organisations and culture (Van Der Velder, 2002). As a result, most of the research in knowledge sharing derives from a western perspective and it is more directed at industry. Meanwhile, Skovira (2012) and Jelavic and Olgivie (2010) later wrote articles comparing the Western way and Eastern way of Knowledge Management. Skovira (2012) claimed that the Eastern way is represented by the Japanese way of understanding Knowledge Management while the Western way was represented by Northern America and Europe.

Jelavic and Olgivie (2010), however, do not agree that knowledge management is easily divided into the Western and Eastern way because of the heterogeneous cultures both in the West and in the East. Andriessen and van den Brom (2007) in their article on intellectual capital admitted that most literature on Knowledge Management come from the West. Pauleen and Murpgy (2005) added that Western assumptions on knowledge and information management dominate the research on knowledge management. Zhu (2004) however, has argued that viewing knowledge management from the Western perspective creates problems with knowledge management research, which is mostly from the West as the findings of the research may not be inter-culturally applicable. Meanwhile, many Eastern approaches come from a Japanese perspective as many studies on KS were conducted in Japan. However, Glisby and Holden (2003) and Holden (2002) argue the need to understand KS by conducting further study on KS from other countries' perspectives outside Japan and Western countries.

Rodrigues, Maccari and Almeida (2004) noted that HEIs have not used the benefits of KM which can contribute to an organisation's success. Bradshaw (2011) described the KS process in one Indonesian HEI, which is a Private Undergraduate Provider, the Sekolah Tinggi Theology (STT Intheos) in Surakarta. However, Bradshaw's (2011) investigation provides no information concerning the process of knowledge sharing in State Vocational Study Institutions such as SPs. Clearly, there is a significant gap in the research on KS among staff members of SPs in Indonesia.

Consequently, this research is important for researchers, leaders, policy-makers, and staff at SPs in Indonesia in terms of understanding how knowledge is shared in those institutions. By understanding the KS process or activity and the motivations to share knowledge, they can assess the effectiveness of KS activity in their institutions. Further, by understanding the organisational factors which enable or inhibit KS, those factors can be optimised or minimised respectively to improve

KS. This research also provides another Eastern perspective about what knowledge is shared, the approach used, and factors that influence knowledge sharing.

This research may form the basis of future research on KS behaviour in HEIs and exploration of the most influential motivations or the most common types of knowledge shared in HEIs in Indonesia. It may also contribute to wider theorising regarding the distinct nature of knowledge sharing in Indonesia.

Limitations and Delimitations

Limitations

This investigation is limited by the constraints placed by the Indonesian Directorate of Higher Education (DIKTI) related to time for data collection by scholarship awardees and its restriction to one researcher only. The lack of documentation on knowledge sharing in SPs is a further limitation. Literature related to KS in HEIs in Indonesia is difficult to find. The State Polytechnic Association website contains no data about KS in SPs in Indonesia. These circumstances could cause participants to be unfamiliar with the concept of KS, which may make them unwilling to participate in the research.

Delimitations

The investigation has been limited to a study of knowledge sharing practices in three State Polytechnics in Indonesia and a small number of participants. Therefore, the findings may not be generalised to other Indonesian State Polytechnics. Although there are only three research sites, these research sites represent three major cultures in Indonesia. Therefore, this study is replicable to SPs with similar contexts. The participants will be limited to Assistant Directors, Heads of Department, and two lecturers from each State Polytechnic. Administrators and students will not be included. In addition, the findings will not be reported quantitatively.

Definition of Terms

Knowledge management

Knowledge management entails managing knowledge and includes: creating, organising (keeping), sharing, and applying knowledge. It refers to: 'the process in which organisations assess the data and information that exist within them, and is a response to the concern that people must be able to translate their learning into

useable knowledge' (Aggestam, 2006, p. 296). It concerns collecting, organising, and distributing information throughout an organisation to be used by those who need it (it is not only kept within the unit from where it originates).

According to Firestone and McElroy (2005, p 3), 'knowledge-management is the set of processes that seeks to change the organization's present pattern of knowledge processing to enhance both it and its outcomes.' It is a valuable source for competition (Jo & Joo, 2011).

Knowledge Sharing

Yang and Chen (2007, p. 96) summarised knowledge sharing as: 'a set of behaviours about knowledge exchange which involves actors, knowledge content, organizational context, appropriate media, and social environment.' It concerns knowledge transfer which is described as: "a process of exchange of explicit or tacit knowledge between two agents, during which one agent purposefully receives and uses the knowledge provided by another' (Kumar & Ganesh, 2009, p. 163).

Knowledge sharing behaviour, intention, and attitude

Knowledge sharing behaviour is the degree to which the employees actually share the knowledge with other members in their organisation. Meanwhile, KS intention measures the readiness of the employees to engage in KS. Knowledge Sharing attitude refers to the degree of positive/negative feelings the employees have towards the intention to share knowledge with other members of the organisation. Knowledge Sharing behaviour is determined by employees' intention towards KS, and the intention is established by the attitude toward KS (Chennamaneni, 2006).

Knowledge

Knowledge is a mix of values, contextual information, and expert insights that provide a description for new experience and information. (Ipe, 2003). Gottschalk (2007) stated that knowledge is what people know and it is stored in the human brain. Knowledge is *information combined with interpretation, reflection, and context*. Meanwhile, van Bommel, Mulligen, Mons, Wijk, Kors and van der Lei (2006) argue that knowledge can be stored, searched, and processed by computer systems.

Motivation

Motivation is the tendency or force to act, and this tendency or force can be the result of both intrinsic and extrinsic factors (Andriessen, 2006).

Organisational Factors

According to Daft (2007), organisational dimensions (factors) fall into two types: structural dimensions and contextual dimensions. Structural dimensions provide labels to describe the internal characteristics of an organisation that include: formalisation, specialisation, hierarchy of authority, centralisation, professionalism, and personnel ratios. Contextual dimensions characterise the whole organisation including its size, technology, environment, goals and strategy, and organisational culture. They describe the organisational setting that influences and shapes the structural dimensions. These two dimensions are interdependent. For example, large organisation size, a routine technology, and stable environment tend to create an organisation that has greater formalisation, specialisation, and centralisation.

Culture

Culture is a set of values, norms, guiding beliefs, and understandings that is shared by members of an organisation and is taught to new members (Daft, 2007, p. 361).

Organisational culture

Organisational culture is the culture within an organisation which consists of values, beliefs, perceptions, behavioural norms, and patterns of behaviour which are always behind an organisation's activities and can be seen (Shafritz, Ott, & Jang, 2016).

Chapter Summary

This chapter describes the introductory parts of the thesis which presents the background to the study, statement of the problem, the purpose and aims of the study. This chapter also includes the presentation of research questions, significance of the study, and limitations and delimitations. The definition of terms is addressed toward the end of chapter.

The following chapter presents the information about the literature which underlines this study. The literature review contains the theories on knowledge sharing, what knowledge shared in High Educational Institutions in Indonesia, and organisational factors which may influence knowledge sharing process.

CHAPTER TWO : LITERATURE REVIEW

Introduction

Previous chapter was an introductory chapter which explained the background, aims, and limitations and delimitations of this study. This chapter provides a review of literature on knowledge sharing in Higher Education Institutions. The review will focus on several key themes that cover knowledge sharing in HEIs, the nature of knowledge, motivation to share knowledge, and opportunities to share knowledge.

Even though as said earlier that most references about knowledge sharing are derived from Western perspectives, references are still required to gain insight into how knowledge sharing takes place in HEIs. Moreover, as mentioned in Chapter 1: Significance of the Study, few references were found regarding knowledge sharing in Indonesia, especially in HIEs. Western literature related to KM had been exported to Asian countries as there is enormous interest (including in Indonesia) in learning about Western approaches to the management of knowledge. Therefore, as discussed by Andriessen and van den Boom (2007) in their comparison of the Western and Eastern views, interaction or adaptation of the application of KM may take place. They argue that it is necessary to understand the Western view of KM practice, including knowledge sharing since Western organisations have been dealing with KM for many years and most literature or theories about KM are of Western origin.

Knowledge sharing

Knowledge sharing is an intentional behaviour (Gagné, 2005) or a conscious activity on the part of the sender of the knowledge even though, according to Ipe (2003), it is not a compulsory behaviour. The practice of knowledge sharing has been gaining increasing attention amongst researchers and many organisational managers and according to Patrick and Dotsika (2007), knowledge sharing is the key for organisations to compete in this growing global knowledge economy. Ipe (2003) suggests that knowledge sharing is driven by power in an organisation. Knowledge Sharing itself requires effective KS practice among staff which is influenced by the motivation to share. Ipe (2003) explains that the motivation as a determinant factor

to share knowledge is influenced by the nature of knowledge (tacit and explicit), opportunities to share (formal and informal), and by the relationship between the three factors of motivation. These are all interdependent and are also influenced by organisational culture. Additionally, Reeson (2008) claims that institutions are constructed by norms, rules, and organisation, and this in turn influences motivation. This study explores what knowledge is shared, the nature of knowledge, the motivation to share knowledge, the approach to sharing knowledge, and organisational factors affecting knowledge sharing.

Yang and Chen (2007, p 96) define knowledge sharing as a knowledge exchange which involves actors, knowledge content, organisational context, appropriate media, and the social environment. Atkociūnienė, Gineitienė and Sadauskienė (2006) conducted a study on learning organisations which considers national regional aspects. Their study demonstrates that knowledge sharing is actually a social activity. The social aspect of knowledge sharing happens mostly in face-to-face interaction as there is social engagement during interaction. Van Der Hooff and Ridder (2004) in their study on the dilemma of determining how knowledge sharing processes could be managed, mention that the knowledge sharing process involves two activities: one's personal intellectual capital communicated to others (donating), and consulting or questioning of colleagues in an effort to get them to share their intellectual capital (collecting). Additionally, according to Gumus and Onsekiz (2007) people are more likely to share (donate or collect) knowledge and skills with their own groups.

According to Christensen (2007), knowledge sharing is the process that seeks to exploit existing knowledge to be transferred so that it is accessible by other members who may use it to solve specific problems, faster, and cheaper than before, and where its goals are to create new knowledge and/or to become better at exploiting the existing knowledge. Knowledge sharing activities are: the owner of the knowledge communicates it in written or verbal form; then, the knowledge receiver must be able to perceive and make sense of it. Knowledge sharing itself promotes collaboration. According to Al-Alawi, Al-Marzooqi and Mohammed (2007), knowledge sharing techniques are: collaboration (team work), training, formal and informal discussion, utilising knowledge sharing tools (such as email, intranet), communication networks (internet), chatting during breaks, brainstorming workshops, seminars, conferences, focus groups, and quality circles. Antonova and Elissaveta (2011) explain that people who participate in the knowledge sharing process must be able to externalise their tacit knowledge and

ensure it is accessible for others through IT systems while knowledge transfer attempts to enable organisations to learn, freely share past experiences (organisational memory), and to gain better access and use of the knowledge.

Researchers have different opinions on knowledge transfer as it is seen as different from knowledge sharing (Tangaraja, Rasdi, Samah, & Ismail, 2016; Paulin & Suneson, 2012) and may also be interchangeable (Kumar & Ganesh, 2009; Al-Alawi, et al., 2007; Amalia & Nugroho, 2010), or complementary. Paulin and Suneson (2012) in their study on knowledge sharing and knowledge transfer definitions explain that the different definitions and relations between knowledge transfer and knowledge sharing appear when there is a lack of clarity of the concepts (Paulin & Suneson, 2012). Lin (2007) and Tohidinia and Mosikhani (2010) emphasise the involvement of knowledge exchange actions between two or more individuals where both parties are active sources (knowledge provider and knowledge recipient). Knowledge sharing may occur beyond individual levels involving both knowledge provider and knowledge recipient where knowledge donating and knowledge collecting actions diverge in two directions. Meanwhile, knowledge transfer can be achieved through personalisation (tacit knowledge) and codification (through IT) such as in explicit knowledge sharing (Joia & Lemos 2010). Knowledge transfer has broader contexts than knowledge sharing because knowledge transfer does not only involve the transfer of knowledge between individuals but also codification (Tangaraja, et al., 2016). Paulin and Suneson (2012) add that knowledge transfer can be between individuals, teams or units, and in organisations' formal meetings. In conclusion, Zarinpoush, Sychowski and Sperling (2007) argue that knowledge transfer describes how knowledge and ideas are transmitted from the source to the recipients. Knowledge transfer involves a one-way flow of knowledge from researchers to practitioners. It may happen that the source of knowledge (provider) transfers the knowledge while the recipients receive the knowledge by listening or receiving the knowledge through IT. This idea is similar to the definition of knowledge transfer explained by Antonova, Csepregi and Marchev (2011, p. 148). Their study on the use of IT for knowledge sharing and knowledge transfer illustrates knowledge transfer as an act of 'transmitting the knowledge from one source to another source....'

According to Christensen (2007), knowledge sharing creates new knowledge and exploits existing knowledge. Knowledge sharing is actually one of the processes in knowledge management. Knowledge management is a process where knowledge is embraced as a strategic asset to drive sustainable business advantage

and promote a 'one-firm' approach to identify, capture, evaluate, enhance and share a firm's intellectual capital. It is not about the technological systems that are implemented, it is about the process people follow to capture the knowledge (Boomer, 2004, p. 26).

Knowledge management has four processes: knowledge-creation, storage, distribution (sharing), and application as it is mentioned by Odor (2018) in his study on knowledge management. The strategy for managing knowledge can be a system strategy where the focus is on the organisation's ability to create, store, distribute, and apply: and human strategy which focuses on knowledge sharing via interaction such as teamwork (Amalia & Nugroho, 2010). Knowledge creation and sharing are very important for an organisation's success (Todd, et al., 2006). Knowledge creation itself is achieved through knowledge sharing (interaction between individuals) (Ipe, 2003). Therefore, knowledge has to be shared in order to be created. Knowledge is developed when others share their knowledge. By combining our knowledge with knowledge from others, new knowledge is created (Chong & Pandya, 2003). Benefits associated with knowledge-management implementation include improved decision-making, improved customer service, improved response to business issues, enhanced employee skills, improved productivity, increased profits, sharing of best practices, and employee attraction (Boomer, 2004).

Knowledge sharing is actually learning. Knowledge sharing and learning are closely related. Skinnarland and Sharp (2011) argue that these factors are very important in an organisation and strongly influence each other. Knowledge sharing especially through conversation (face-to-face communication or interaction) leads to learning. Through learning, people are more likely to share knowledge. The objective of knowledge management is organisational learning which is the key for learning organisations. Learning itself is a social process where communication and interaction during the talking, take place. When there is communication, learning happens (Hurst, Wallace, & Nixon, 2013). According to Yeo (2006) in a study on building knowledge through organisational learning, learning is the acquisition, distribution, and storage of information. Meanwhile, according to Bennet (2006) learning is the activity of the creation and acquisition of knowledge. O'Toole (2000), however, says that learning is not only about knowledge acquisition, but also about knowledge sharing. According to Debowski (2006) in her publication on learning, existing knowledge is adapted to generate new knowledge. This process is similar to Christensen's (2007) description on knowledge sharing as a process to create a new knowledge by exploiting the existing knowledge. Meanwhile, McEvoy (2012)

in a study on knowledge sharing as a means of learning demonstrates knowledge sharing which happens in workshops as an ideal process of learning. According to Aggestam (2006), the learning in an organisation includes individual and team learning.

The relationship between knowledge sharing and learning leads to the importance of knowledge sharing for human health. Learning, is not only advantageous for an organisation but also for each individual's brain health within the organisation since the learning in an organisation includes individual and team learning. Learning through social interaction via knowledge sharing could support a healthy brain. At the Dementia Collaborative Research Centre (DCRC) researches conducted by Farrow and O'Connor (2012) and Woodward, Brodaty, Budge, Byrne, Farrow, Flicker, Hecker and Velandai (2007) illustrate the importance of learning through social interaction to avoid dementia, increase memory, and prevent depression. DCRC itself is a collaborative work on dementia conducted by doctors and experts in the brain system, especially dementia. Farrow and Connor's study emphasises the significance of learning through social interaction to get the most benefit from learning for a healthy brain.

Managing knowledge itself is very important because it is one of the most important keys in organisational success. Lussier and Achua (2013) and Wenger, McDermott and Snyder, (2002) have claimed that knowledge is the key to success. According to Bierly, Kessler and Christensen (2000), knowledge will lead to sustainable competitive advantage and organisational success and it is assumed to be a strategic resource for organisational success (Ipe, 2003). Meanwhile, Robert (2006) states that knowledge management not only makes work efficient, but also gives value to the client. Koe (2005) used Francis Bacon's statement when concluding that knowledge is power. He added that even though the power of knowledge is well known, knowledge is still the hardest thing in the world to sell, and although knowledge management is assumed to be the key, many organisations still only see knowledge management as just 'nice thing to have'. The success of knowledge management begins with the individual in an organisation. Van den Hooff and Ridder (2004) state that to manage knowledge effectively is to transform individual and group knowledge into organisational knowledge. According to Chau (2018), knowledge sharing is an important way to transform the individual and group knowledge into organisational knowledge.

The different approaches toward KM show that it is not considered a universal concept of isolated models and approaches. Knowledge Management is

the result of the interaction of all existing models (Khvatova & Igratyeva, 2008). According to Andriessen and van den Boom (2007) the Western idea of knowledge management cannot be transferred to Asian businesses without considering the local view of knowledge. Andriessen and van den Boom recommend that each country find the KM model that could interact with existing Western models to help them survive in a competitive world and to better integrate with the world knowledge economy. It can be concluded that Western literature is very important as a reference but is not to be used alone.

Leidner et al. (2006) show how the Western approach to knowledge management is more likely to be a process approach while the Eastern approach is more likely to be a practice approach (2006, pg. 20). The key differences are outlined in Table 2.1.

Table 2.1

The Process vs. Practice Approaches to Knowledge Management

	Process Approach	Practice Approach
Type of Knowledge Supported	Explicit knowledge – codified in rules, tools, and processes	Mostly tacit knowledge – unarticulated knowledge not easily captured or codified
Means of Transmission	Formal controls, procedures, and standard operating procedures with heavy emphasis on information technologies to support knowledge-creation, codification, and transfer of knowledge	Informal social groups that engage in storytelling and improvisation. (The members possibly meet (face to face) regularly, the topic is usually informal)
Benefits	Provides structure to harness generated ideas and knowledge. (Ideas and knowledge are documented or recorded)	Provides an environment to generate and transfer high value tacit knowledge. Provides spark for fresh ideas and responsiveness to changing environment.
Disadvantages	Fails to tap into tacit knowledge. May limit innovation and forces participants into fixed patterns of thinking.	Can result in inefficiency. Abundance of ideas with no structure to implement them (as it is not documented, no ideas are recorded)
Role of Information Technology	Heavy investment in IT to connect people with reusable codified knowledge	Moderate investment in IT to facilitate conversations and transfer of tacit knowledge.

Adapted from: Leidner, Alavi, & Kayworth (2006, p. 20).

Knowledge sharing in Higher Educational Institutions

Higher educational institutions are sources of knowledge since they play a key role in knowledge creation and transfer (Jain, Sandhu, & Sidu, 2006; Tian, Nakamori, & Wierzbicki, 2009), and as such they should be places where knowledge sharing happens (Ng, 2010). As one of the HEIs, State Polytechnics should also be the places where knowledge attainment, sharing, and storing occur. Many studies on knowledge sharing focus on business organisations. However, KS is just as important for HEIs (Cheng, Ho, & Lau, 2009), as it is the source of competitive advantage (Liebowitz & Chen, 2003). In order to be effective, knowledge management must emphasise KS in order to compete with similar organisations as it is argued by Babalhavaeji and Kermani (2011) in their research related to determining factors which influence knowledge sharing.

Currently, universities and other higher educational institutions are in the knowledge business and are exposed to market pressure like other businesses (Jahani, Ramayah, & Effendi, 2011). State Polytechnics in Indonesia also experience high competition in the marketplace. Therefore, this study will contribute to their improvement in competing in the marketplace as the study will demonstrate how KS contributes to their effectiveness. Moreover, the members of SPs will know how to share knowledge effectively and recognise the factors which encourage or discourage KS. Even though many KS studies focus on business organisations, KS is similarly important for HEIs (Cheng, Ho, & Lau, 2009) as it is a source of competitive advantage (Liebowitz & Chen, 2003). Nonaka and Takeuchi (cited in Jahani, Ramayah, & Effendi, 2011, p. 87) state that in developing countries, KS in HEIs plays a key role in KM since an individual's knowledge will have little impact on the organisation unless it is transferred to other individuals. Jahani et al. (2011) query the applicability of KM to HEIs in their study on reward and leadership in KS. They claim that KS is the reason for the HEIs' existence and this means that HEIs should leverage the knowledge. Jahani et al. (2011) further claim that the tracking of KS is just beginning in Higher Education. There is no question why the information about how KS in SPs in Indonesia is limited.

This study addresses the fact that HEIs are the places where KS takes place (Ng, 2008). Knowledge Sharing practice in HEIs should not be a problem and should be effective. The knowledge shared in academic institutions includes:

teaching (such as teaching materials, teaching methodology, experiences and knowledge), conducting research (such as collaborative teaching books, collaborative articles, collaborative research projects), and membership of professional associations (journal editorial committees, and participation in reviewing journal articles) (Babalhavaeji & Kermani, 2011). According to Abdillah (2014) in his study on managing knowledge sharing and culture in HEIs in Indonesia *Tridharma* (three dedications) of HEIs in Indonesia is the core activity and is associated with the creation and dissemination of knowledge and with learning itself. Lubis (2004) in his study on the implementation of *Tridharma* added that *Tridharma* is a strategy to achieve the objective of HEIs in Indonesia. Abdillah (2014) mentions *Tridharma* includes education and teaching, research and development, and community service followed by support activities. Furthermore, lecturers' activities in Indonesia are related to the implementation of *Tridharma*. He elaborates saying that the evidence of those activities is very important for the lecturers and the institutions. It can be used to raise a lecturer's rank. DIKTI (2014) clearly stated that the most important component for lecturers to upgrade their level was the implementation of *Tridharma*. Salary for lecturers is determined by their ranks (Government of Indonesia, 2009). Rank or the different level of structural positions, however, may create negative effects on knowledge sharing. Thongprasert and Cross (2008) conducted a study on Thai and Australian students in virtual classroom environments. Their study, which focuses on the cross-cultural perspectives of knowledge sharing describes how rank (feeling inferior) makes Thai students feel reluctant and too shy to share knowledge.

Knowledge Sharing in Islam & Hinduism

The discussion on knowledge sharing according to religions is important as religions influence many aspects of Indonesia's life including the sharing of knowledge (further description on religious life of Indonesians is in Chapter 3). Two of five major religions in Indonesia, Islam and Hinduism, encourage KS. Religious teaching in Islam and Hinduism includes the importance of KS. This religious factor of KS was also discussed by Kumar and Rose (2012) in their research related to knowledge sharing enablers and Islamic work ethics. Their research demonstrated that knowledge sharing was grounded in major religions and that knowledge sharing is achievable as it is realistic and can be nurtured.

In Hinduism, the concept of *Tri Hita Karana* or the balance of life encourages equality by sharing what has been received. In *Tri Hita Karana*, not only harmony

(balance) is the important value. In *Tri Hita Karana*, it is also crucial to assure that every person receives similar things (Astiti, Windia, Sudantra, Wijaatmaja, & Dewi, 2011). Amaliah (2016) in her study which explained the value of *Tri Hita Karana* in deciding selling costs claimed that the application of *Tri Hita Karana* was the key to balance, or harmony. *Tri Hita Karana* encouraged sharing in order to balance humans, nature, and Gods, which in the end was to achieve harmony because according to *Tri Hita Karana*, every human deserved fairness. *Tri Hita Karana* does not specifically mention knowledge sharing. The concept, however, delivers an overriding message of universally sharing what one receives, the importance of working together, and communication.

In Islam the requirement to share knowledge is specific as stated in the Qur'an and Hadiths as stated by Kazmi (2005). Hidayatollah (2013) refers to the obligation to seek and develop knowledge. He stated that it was important for persons to have a great amount of knowledge because those who were knowledgeable would understand God's requests and orders. Kazi (1988) adds that the main source of all knowledge for all Muslims was considered to be the Qur'an. It required them to study nature and to understand it wisely. Many verses of the Qur'an inspire and invite Muslims to observe nature and to study it. Prophet Mohammad's first revelation was a command from Allah (God) to read, write and gain knowledge. Similar to Kazi (1988), according to Kazmi (2005), the source of knowledge in Islam is the Qur'an. The knowledge in the Qur'an is detailed in Hadiths which contain traditions and *sunnah* (the actions of the Prophet Mohammad). A study on the use of cultural approaches in managing knowledge conducted by Mohannak (2011) describes that in Islam, knowledge gained must be practised, shared and disseminated. Mohamed, O'Sullivan and Ribiere (2008) in their research about new directions of the evolution of knowledge in the Arab region argue that Islam is a universal religion not limited to Arab countries. The Qur'an's very first command is strictly about knowledge and as a result of this, Islamic countries have for many hundreds of years been prepared for knowledge nourishment, religiously, culturally and linguistically. Therefore, Islam encourages looking for, acquiring and the use of knowledge for all Muslims as an obligation and requires cooperation and a sense of collectiveness within any organisation. The main purpose of acquiring knowledge itself is to be closer to God (Mohannak, 2011).

Not only is sharing knowledge important in Islam but seeking for knowledge itself is also crucial. Kazi (1988) argues that Islam requires all Muslims to search for knowledge. The Prophet Mohammad explained that the pre-eminence of the one

who has knowledge over the one who merely worships is like the supremacy of the moon over every other heavenly body. Islam, requires all Muslims to search for knowledge. Mohammad saw seeking knowledge as an obligation upon every Muslim. He stated that scholars are the heirs of the Prophets and that the Prophets did not leave behind monetary rewards but, rather their legacy was knowledge. The all-pervasive attitude toward 'knowledge' touches every aspect of Muslim religious, political and intellectual life. Hidayatollah (2013) explained that in the Qur'an 58: 11, it was noted that God raised ones who were knowledgeable to a higher level if the knowledge was developed and its implementation was oriented according to Islamic values. He also noted that those who share each other's advice are also expected as it is mention in Surah Al-Ashr (103:1-3) in the Qur'an: 'By time, indeed, mankind is in loss; except for those who have believed and done righteous deeds and advised each other to truth and advised each other to patience.' Similar to Surah Al-Ashr, Hambali , Meiza and Fahmi (2014) in a study on Islamic perspective on factors which lead to gratitude stated that Surah Al-A'raf (56) in the Qur'an mentions that those who do good deeds are blessed (by God).

Another factor in religions which encourages the sharing of knowledge is gratitude. Gratitude motivates people to share knowledge. In religion, the role of gratitude is important. Hambali et al. (2014) in a study about the gratitude of Muslim parents who have children with special needs, defined gratitude as '*syuku*'. This word came from an Arabic word and meant "*berterimakasih*" (to thank) in Indonesian. Gratitude was mentioned many times in the Qur'an such as in Al-Baqorah 171 and An-Nahl 78, and these illustrated how important gratitude (*syukur/berterimakasih*) was. Hambali et a.l (2014) explained that our gratitude for what God had given us should be shown by *syukur* to God as it is stated in Surah AnNahl (14) in the Qur'an. Moreover, Surah Ibrahim (7) mentions that if we thanked God (for what He had given to us), God would give more. Gratitude is also important in Hinduism (Kementrian Pendidikan dan Kebudayaan Indonesia, 2014). A study about the importance of harmony in *Tri Hita Karana* conducted by Padmini and Sanjaya (2015) described gratitude built harmony, which in the end would create happiness for the world.

The nature of knowledge

Knowledge is a mix of values, contextual information, and expert insights that provide a description for new experiences and information (Ipe, 2003). According to Bartol and Srivastava (2002) in their study on reward systems in knowledge sharing,

knowledge includes information, ideas, and expertise relevant for tasks performed by individuals, teams, work units, and organisations. Knowledge has an interesting characteristic in that its meaning grows when shared (Bhirud, Rodrigues, & Desai, 2005). Meanwhile, Chong and Pandya (2003) argue that knowledge is an understanding gained from experience, reasoning, intuition, and learning. There are two types of knowledge. Knowledge can be both tacit and explicit (Odor, 2018; Ipe, 2003; Chen, Sun, & McQueen, 2010; Gao, Li, & Clarke, 2008; Rocha, Cardoso, & Tordera, 2008; Lucas, 2006; Erickson, Rothberg, & Carr, 2003; Song, 2002), each of which have different characteristics as outlined in Table 2.2. O’Toole (2011) discusses knowledge retention in a study on how organisations remember. She explains that the tacit and explicit knowledge in an organisation could be individual and collective (from a group sharing). O’Toole’s study demonstrates that knowledge retention structures of individual and collective knowledge can be semantic (relates to facts and figures), procedural (involves action) or episodic in nature (recorded and subjective nature intended by the writer), or a combination of all three. Bessick and Naicker (2013) conducted a study on the importance of knowledge retention in order for an organisation to remain competitive. They argued that knowledge sharing played an important role in knowledge retention.

Table 2.2

Tacit and Explicit Knowledge

Tacit knowledge (non-documented ideas or knowledge)	Explicit knowledge (documented ideas or knowledge)
Inexpressible in a codified form Subjective Personal Context specific Difficult to share	Codifiable Objective Impersonal Context dependent Easy to share

Adapted from Hislop (2009) as cited in Amalia and Nugroho (2010, p. 6)

Tacit Knowledge: Korth (2007) states that tacit knowledge is highly personal knowledge which is difficult to communicate and, according to Laframboise, Croteau, Beaudry and Manovas (2007) it is hard to share. O’Toole (2011) even noted tacit knowledge as the ‘stickiest’ knowledge. Tacit knowledge is the knowledge which is still in someone’s head or in an organisation and is gained from one’s experience (Odor, 2018; Lucas, 2006). It cannot be easily distributed technologically (Mohamed Stakonsky, & Murray, 2006), and is entrenched in action (Korth, 2007). Even though it is more difficult to manage tacit knowledge than explicit knowledge (Chinowsky & Carrillo, 2007; Laframboise Croteau, Beaudry, & Manocas, 2007;

Selamat & Choudrie, 2004), most knowledge held in an organisation is tacit knowledge (King, 2009). Laframboise et al. (2007) argue that tacit knowledge is the key to achieving competitive advantage. In addition, Osterloh and Frey (2000) believe that intrinsic motivation (which according to Deci and Ryan (2000) is the reason to do something, as it is inherently interesting or enjoyable) is needed to share tacit knowledge effectively.

Explicit Knowledge. Explicit knowledge is knowledge documented both by an individual or the organisation (Lucas, 2006) and as it is the type of knowledge which has been codified using words or numbers (Laframboise, et al., 2007; Rocha, et al., 2008), it can be stored using IT tools (Mohamed, et al., 2006). Thus, it is easily communicated and shared (Korth, 2007). Most explicit knowledge is technical or academic data or information in formal language (Smith, 2001). However, because explicit knowledge is easy to transfer, it does not mean it is easy to share since not all explicit knowledge is rationalised (such as policy or procedures) (Ipe, 2003). Osterloh and Frey (2000) mention that intrinsic motivation can be the motivator to share explicit knowledge as it is observable.

Knowledge Creation

According to Nonaka (1991), there are four basic patterns to creating knowledge in an organisation: from tacit to tacit (e.g.: learning from a mentor, observing, storytelling and the knowledge is not explicit); from explicit to explicit (eg: using data to write a report); from tacit to explicit (eg: recording discussion); and from explicit to tacit (e.g.: interpreting the explicit knowledge so it is understood by other members) (cited in Smith, 2001). This knowledge conversion or interactions are called SECI (Socialisation [from tacit to tacit], Externalisation [from tacit to explicit], Internalisation [from explicit to tacit], and Combination [explicit to explicit]) (Nonaka & Takeuchi, 1995). Nonaka and Takeuchi say that knowledge in an organisation is formed by the sharing of knowledge by individuals, and this means that KS is required to form the knowledge in an organisation. Mohannak (2011) stated that the process of knowledge is initiated at an individual level.

According to Hoegl and Schulze (2005), *Socialisation* is the exchange of tacit knowledge which is usually shared through the informal interaction between individuals which enhances understanding of the knowledge. Sharing occurs by spending time together, creating joint hands-on experiences, and working in the same environment. It may take place in informal meetings within the organisation or outside the organisation between members of an organisation or community.

Meulenbroek, Weggeman, Torkkeli (2018) in their study on unplanned meetings among researchers say that the informal meeting should not be overlooked in knowledge sharing process. The sharing of tacit knowledge has positive impacts on productivity (Torabi & El-Den, 2018). *Externalisation* is codifying or converting tacit knowledge into explicit knowledge such as transcribing interviews, minutes or transcripts of a meeting, or taking notes from a lecture. In order to make externalisation possible, reflection is necessary. The next process of knowledge-creation is *Combination*. Combination is the process of knowledge-creation which occurs as a result of relations between previously unrelated knowledge domains such editing or combining the explicit knowledge. In this way, the knowledge is processed to form new or more complex and systematic explicit knowledge. The result of the combination process could be product specifications and manuals. The last stage is *Internalisation*. This is the process of absorbing explicit knowledge to create tacit knowledge such as that which is generated through personal encounters in day-to-day work, learning-by-doing, or experimentation.

Motivation to Share Knowledge

Sharing knowledge requires the motivation to share. Knowledge sharing can be an intentional behaviour (Gagné, 2005), or a conscious activity from the knowledge sender [as the source] (Ipe, 2003). In KS behaviour, motivation is the first step (Bock & Kim, 2002). The motivation discussed in KS behaviour is mainly at the individual level (Bock & Kim, 2002; Ipe, 2003), and understanding what motivates employees to share is important (Osterloh & Frey, 2000). Fostering motivation to share knowledge must precede the encouragement of KS, (Bock & Kim, 2002) since the intention to share is derived from the motivation to do so (Oye, Mazleena, & Noorminshah, 2011). The research model constructed by Bock and Kim (2002, p. 16) shows that motivation is the initial element of KS behaviour. It illustrates the attitude toward KS which determines the intention to share. Finally, the intention to share establishes KS behaviour. As the consequence of KS is a voluntary and social process, individual motivation becomes a main factor in explaining KS behaviour (Harder, 2008). Studies on the dynamics of voluntary engagement in knowledge sharing conducted by Lodhi and Ahmad (2010), and Mergel, Lazer and Benz-Scharf (2008), and Kaser and Miles (2017) illustrate that a voluntary engagement takes place in knowledge sharing.

Michailova and Husted (2001) in their study on knowledge sharing in business environments and cultures, however, describe that knowledge sharing

should be forced initially. Therefore, a knowledge sharing culture will be established. Susanty and Wood (2011) in their studies even mention that sharing knowledge might be seen as an obligation especially for managers. Susanty and Wood said that the obligation is mainly about sharing back the knowledge when people share knowledge. Similar to a study conducted by Harder (2008), studies both on the relationships between leadership and knowledge sharing conducted by Bradshaw, Chebbi and Oztel (2015) and Melo, Almeida, Silva, Brandão and Moraes (2013) explain that leaders can influence knowledge sharing by influencing the staff's motivation to share knowledge. Azudin, Ismael and Taherali (2006) in their study on informal communication in knowledge sharing argue that it would not be possible for knowledge management (including knowledge sharing) to take place without the support and encouragement from leaders. Jo and Joo (2010) add that the willingness to share the knowledge in an organisation, depends on the social relationships and the structures in that organisation. Meanwhile, Frey and Osterloh (2002) in their publication on motivation to perform within organisations argued that motivation was not the end itself as further expectations were often anticipated or desired. This study is similar to studies conducted by Andriessen (2006), Hall (2001), and Osterloh and Frey (2000). Their studies indicate other expectations which follow the motivation to share knowledge.

Motivation itself is central to start KS activity (Ipe, 2003) and is the first step in defining KS behaviour (Bock & Kim, 2002). The research model constructed by Bock and Kim (2002, p. 16) shows that motivation is the initial step in KS behaviour. This motivation defines the attitude towards KS which in turn determines the intention to share and results in KS behaviour. According to Osterloh and Frey (2000), understanding what motivates employees to share is important. Therefore, the discussion of motivation within KS is mainly focused at the individual level (Bock & Kim, 2002, Ipe, 2003). According to Clark (2003, p. 2):

... work motivation, is the process that initiates and maintains goal-directed performance. It energizes our thinking, fuels our enthusiasm and colours our positive and negative emotional reactions to work and life. Motivation generates the mental effort that drives us to apply our knowledge and skills.

Andriessen (2006) states the motivation as discussed in KS is work motivation. This is because the discussion of KS is in the context of an organisation in which the motivation to share is related to motivations concerning other work behaviours. Ipe (2003), Bock and Kim (2002), Harder (2008), Reeson (2008), and Tan, Lye, Ng and

Lim (2010) divide the motivations to share knowledge into: intrinsic and extrinsic motivations.

Ipe (2003) mentions that perceived power given to knowledge and reciprocity are intrinsic motivations while the relationship with recipients and rewards are extrinsic motivations. Hung, Durcikova, Lai and Lin (2011), however, argue that reciprocity is an extrinsic motivation. Therefore, there is inconsistency on the division of intrinsic and extrinsic motivations to share. Adriessen (2006) explains that a motivation is possibly the combination of both intrinsic and extrinsic motivations as the result of the difference between these two types of motivations is not explicit. Akin-Little and Little (2009) and Cabrera, Collins and Salgado (2006) in their studies on intrinsic and extrinsic motivations to share knowledge and individual engagement in sharing knowledge argue that extrinsic motivation triggers intrinsic motivation. Meanwhile, Lee and Ahn (2007) and Burgess (2005) explain that intrinsic motivation may lead to extrinsic motivation and vice versa.

Intrinsic Motivation

Intrinsic motivation is the most influential of motivations in KS, especially in relation to sharing tacit knowledge (Osterloh & Frey, 2000). The factors that influence internal (intrinsic) motivation are the perceived power attached to the knowledge and the reciprocity that results from the sharing (Ipe, 2003). The perceived power attached to the knowledge may limit KS because KS (especially sharing tacit knowledge) depends on an individual's willingness to share. This is due to the owners of the tacit knowledge recognising the power they have from owning the knowledge and their awareness that it is their personal property right, which will not be shared easily (Oye, Mazleena, & Noorminshah, 2011). Ipe (2003) argues that if the motivation to share is perceived power, then people use the knowledge for control and defense. Moreover, Tiwana (2002) says that KS can be regarded as weakening the power or status of the knowledge owner. Similarly, Tiwana (2002) and French and Raven (1959) identified knowledge (expertise) as a source of power, the disclosure of which might lead to an erosion of individual power, thereby partly explaining an individual's reluctance to share with others. French and Raven call this an expert power. If individuals assume that the knowledge they have is power, it may lead to knowledge-hoarding instead of KS (Gupta & Govindarajan, 2000). This, according to Riege (2005), benefits ones' career advancement even though he adds that not only individuals, but groups or organisations can hoard knowledge. Evidently, for the effectiveness of KS itself,

knowledge-hoarding creates problems, as it causes ineffective utilisation of knowledge (Jahani, et al., 2011).

Some authors argue that KS does not lead to an erosion of power for the owner of the knowledge or of the knowledge itself. According to Kanter (cited in Shafritz, Ott, & Jang, 2014), one can expand power by sharing it. Kolm (2008) adds that if the receiver depends on the sender (in this case for the knowledge) this empowers the giver. Through KS, the knowledge itself becomes stronger, because unlike tangible assets which depreciate in value when they are used, knowledge as a tangible asset grows when used and depreciates when not used (Davenport & Prusak, 2000; Sveiby, 2001). Egbu, Hari and Renukappa (2005) note that knowledge is an abstract thing. Knowledge can expand when it is shared. Moreover, according to van den Hooff and De Ridder (2004), KS is a process where people exchange knowledge (tacit or explicit) to create new knowledge. Therefore, it can be argued that KS leads to knowledge expansion which may lead to increased competitiveness. Arguably then, when individuals know that KS increases success and power, they will be motivated to become involved in KS so that they will gain new knowledge (and increase their power). Ipe (2004) in her study on motivators and inhibitors for knowledge sharing argues that one of social factors which inhibits knowledge sharing is power politics which derives from Francis Bacon's: 'knowledge is power'. Here, knowledge is used to control as the owner of knowledge believes that 'power comes from knowledge'. A knowledge sender in an organisation is stimulated both horizontally and vertically by a reciprocal flow of knowledge when they share theirs with others (Schulz, 2001).

For reciprocity to become a motivator for sharing knowledge, one must first require knowledge worth sharing (Schulz, 2001). Studies related to reciprocity such as those conducted by Ilyasa, Lei, Haider, and Hussain (2018), Kankanhalli, Tan and Wei (2005), Schultz (2001), and Molm, Takahashi and Peterson (2000) expose that in knowledge sharing people expected the reciprocation of knowledge. The sender of knowledge expects a new knowledge in return for the knowledge he or she shares (Ipe, 2003). Reciprocal sharing itself occurs when people are intrinsically motivated because their needs are satisfied (as antecedent of KS), or when satisfaction can be achieved through KS (subsequent to or coinciding with KS) (King & Mark, 2005). Knowledge Sharing involves social interaction (Bock & Kim, 2002). As a result, reciprocity is an important aspect of motivation to be developed because it is the basis of social relations (Kolm, 2008).

Reciprocity, which is a form of cooperation in which two or more people give and take in equivalent measure (Keysar, Converse, Wang, & Epley, 2008), can be both positive (reward for a kind treatment) and negative (punishment for unkind treatment) (Falk & Fischbacher, 2000). It can also be direct and indirect as stated in a study conducted by Nowak and Roch (2006) on the relationship between upstream reciprocity and the evolution of gratitude. Nowak and Sigmund (2005) conducted a study on the evolution of indirect reciprocity. Their study shows that direct reciprocity is that which happens between similar actors or between two people. For example, if A benefits B, B will reciprocate with A. Meanwhile, according to Nowak and Roch (2006), indirect reciprocity is when the return of one's action does not come from the first benefactor (the actual recipient of the original action). It occurs in a larger scheme and involves more than two people (Dufwenberg, Gneezy, Güth, & Van Damme, 2000). Nowak and Roch (2006) add that indirect reciprocity can be downstream (A helps B, but someone else will help A). In upstream indirect reciprocity, someone who has just received help may have an unreasonable urge to help someone too.

Nowak and Roch (2006) argue that the recipient in reciprocity experiences gratitude. This emotion leads to the recipient helping either the donor or other people. Gratitude is a positive emotion (McCullough, Kilpatrick, Emmons, & Larson, 2001), and so people who feel gratitude are more helpful to those in their social networks (McCullough, Emmons, & Tsang, 2002). Therefore, it can be assumed that this emotion acts as a catalyst for interaction. According to Algoe, Haidt, and Gable (2008), the emotion of gratitude has a social effect, which may promote relationship formation and maintenance, may alter and improve relationships and also initiate a relationship building cycle between recipients and benefactors. Gratitude is very important in knowledge sharing according to Islam and Hinduism as explained earlier. At the group level, gratitude may help solve the problem of integration and cooperation between group members. Employees' positive attitudes toward KS are formed by the expectations of reciprocation of KS (Bock & Kim, 2002). Ardichvili, Page and Wentling (2003) in their study on motivations and barriers on virtual knowledge sharing showed that knowledge will flow easily if the members assume knowledge as a public belonging. Here, gratitude is very important. Studies conducted by Huang and Chen (2015), Ardichvili et al. (2003), and Wasko and Faraj (2000) indicate there is an obligatory feeling or moral obligation in gratitude. Gratitude leads to reciprocity as the result of social obligation involvement as well as moral obligation. Therefore, Emmons (2004)

stated that gratitude is the core of reciprocity and Komter (2004) argued that gratitude forces the receivers to return the benefit, the knowledge.

Reciprocity can bring a fear of exploitation, where individuals feel that the knowledge they give is not balanced with the knowledge (or other benefits) they receive (Empson, 2001). Kolm (2008) explains that a reciprocal engagement generated through a feeling of gratitude may cause negative effects. For example, a receiver may have a sense of a loss of their freedom as they depend on the information (knowledge) owned by the source (sender). There may also be a sense of moral indebtedness. However, gratitude is a stronger motivation for pro-social behaviour than feelings of indebtedness (Tsang, 2007). Moreover, according to Algoe, Haidt and Gable (2008), gratitude is about more than repaying benefits; it is about sustaining social structure, and KS in this sense is part of the functioning of all social systems.

Extrinsic Motivation

External (extrinsic) factors include the relationship with the recipient and rewards (Ipe, 2003). Ipe expands this by saying that the relationship with the recipient is about the relationship between the sender and the recipient, which is influenced by trust and the power or status of the recipient. Boer, van Baalen and Kumar (2002, p. 139) affirm that, 'the motivation to share knowledge is based on intimacy'. Lin (2007) and Al-Alawi et al. (2007) add that trust is needed to develop knowledge sharing. McNeish and Mann (2010) argue that the roles of trust in knowledge sharing are antecedent and are a consequence of knowledge sharing. Alongside this, the expected association factor proposed by Bock and Kim (2002), argues that if employees believe they could improve relationships with other employees by sharing knowledge, they would develop a more positive attitude toward KS.

Rewards, another extrinsic motivation, can be in the form of monetary incentives and tangible rewards such as, gifts, promotion, and access to information (Andriessen, 2006). A company must give employees incentive to transfer knowledge (Gupta & Govindarajan, 2000) and Soo, Devinney and Midgley (2002) state the lack of incentive is an obstacle to KS. Besides the need for rewards to strengthen KS, there is weakness regarding monetary incentives because they only have a temporary effect that disappears when the rewards are stopped (APQC, 1999). In addition, Andriessen (2006) notes that especially with financial rewards, members may not divulge all knowledge. They may save some details so that they

can acquire more rewards. Moreover, Andriessen suggests that not many employees like tangible (incentive) rewards. He continues by saying that the employees make KS a professional activity and KS separates itself as one of the community activities. Wasko and Faraj (2005) indicate that a less tangible reward (such as increased reputation) is a stronger motivation to share knowledge. Zhang, Chen, Vogel, Yuan and Guo (2010), argue that the effectiveness of rewards for KS is still unclear. Meanwhile, Frey and Osterloh (2002) in their study on motivation in workplace add that extrinsic motivation possibly weaken intrinsic motivation. Ledford, Gerhart, and Fang (2013), however, argue that there is no evidence that extrinsic motivation inhibits intrinsic motivation.

Andriessen (2006) states that incentives are normally related to explicit KS because tacit KS is hardly traceable or rewardable through a formal system. Therefore, tangible rewards alone are not sufficient to ensure that KS happens (Gupta & Govindarajan, 2000). Despite some limitations, the literature indicates that in HEIs, incentives and rewards should be awarded for sharing, searching, and using KM to motivate activities (Abdullah, Selamat, Jaafar, Adullah, & Sura, 2008). This study will investigate whether incentives are associated with the motivation to share knowledge in Indonesian SPs.

The success of the rewards systems depends on the mechanism of the reward which may be individual or group (collective) rewards. Individual rewards can be given through evaluating the individual's KS over a period of time (Bartol and Srivastava, 2002), or may be tied to their level of performance (Pierce, Cameron, Banco, & So, 2003). Another way is through group-based incentives (Gupta & Govindarajan, 2000; Bartol & Srivastava, 2002). According to Gupta & Govindarajan (2000), rewards based on collective performance are likely to be effective in creating a feeling of cooperation, ownership, and commitment among employees. They also say that the power of group-based incentives are that they direct attention to maximising the performance of the entire group, rather than of an individual. The down side of group incentives is free riders. They do not contribute, however, these free riders still benefit (Kim & Vikander, 2015; Irlenbusch & Ruchala, 2006; Hamilton, Nickerson, & Owan, 2001). Riege (2005) argues that free riding is not a significant problem, since not all employees need to share knowledge, as it would not be re-used or applied. This implies that not all recipients have the need or capacity to use or share the knowledge shared.

Besides financial rewards, rewards can also be less tangible, such as recognition or reputation, and public praise (Andriessen, 2006). Andriessen says

that people may share knowledge to secure their jobs, to support their relations with others, to increase their reputation, status, and power, and to strengthen their own knowledge and abilities. Individuals contribute their knowledge when they believe their involvement will increase their reputation. Hall (2001) and Wasko and Faraj (2005) claim that rewards, such as an enhanced reputation are a strong motivators to share knowledge. Moreover, a study by Cabrera et al. (2006) shows that recognition or acknowledgement of the contribution, raises intrinsic motivation. However, Harder's study (2008) illustrates that there is no correlation between acknowledgement and intrinsic motivation, as acknowledgement can be seen as controlling. Furthermore, less tangible rewards can create fears that one will receive unfair recognition and accreditation, as well as the risk of intellectual property being stolen (Riege, 2005).

Opportunities to Share

Ipe (2003) divides opportunities to share knowledge into formal and informal mechanisms. Formal approaches can be in the form of training programs, structured work teams, and technology systems whereas informal approaches may take the form of personal relationships and social networks. Ipe adds most knowledge sharing uses the informal approach. Cheng, Ho, and Lau (2009) refer to opportunities to share as closed-network sharing or person-to-person sharing, which depends on personal relationships and trust and open-network sharing through a central open repository, such as database systems, where insufficient voluntary sharing is anticipated. This latter system is usually used to share organisational knowledge. Meanwhile, Leidner et al. (2006) and Riege (2005) divide opportunities to share (approaches) into process approaches and practice approaches. Formal mechanisms (interaction) or process approaches may take place within teams or work units, or across people working in different teams, departments or divisions. For example, teams and departments may hold periodic meetings where the leader seeks the input of employees regarding whether knowledge sharing is rewarded at the level of the individual, the team, or across teams/work units (Bartol & Srivastava, 2002).

Alternatively, the practice approach is based on the premise that most organisational knowledge is tacit. Therefore, formal controls, processes, and IT are not suitable for sharing knowledge and the best way to do so is by building social environments (such as communities of practice) to facilitate KS (Bartol & Srivastava, 2002; DeLong & Fahey, 2000; Brown & Duguid, 2000; Wenger & Snyder, 2000). In

Communities of Practice KS is power as it elevates the status and position of the owner of the knowledge when others enquire after one's expertise (Andriessen, 2006). It is also powerful when knowledge is shared because it enables the success of other members, therefore increasing the effectiveness of those present. Crawford and Strohkirch (2006) stated in their study on communication apprehension in Knowledge Management that the level of fear noticeably affects knowledge management overall, especially the knowledge creation (through knowledge sharing). Meanwhile, Rowe (2004) in her study on inferiority adds that in a discussion, a junior might also be reluctant to share knowledge due to feeling inferior.

There has to be a balance between the process approach (formal approach) and the practice approach (informal approach). Even though Hansen, Nohria and Tierney (1999) recommend not mixing the two approaches, they also suggest striking a balance between them in order to develop more complex organisations. O'Neill and Adya (2007) argue that organisations that do not have formal KS practices (process approach) will fail to leverage their employees' intellectual capital. Formal approaches can be cultivated through formal opportunities such as training programs, structured work teams, and IT (Ipe, 2003). Aalbers, Koppius and Dolfsma (2006) add that in a formal meeting, the transfer of knowledge happens more not in a formal network, but in an informal network. The weaknesses of the process approach are that it fails to capture the tacit knowledge and it forces the members into a fixed pattern of thinking (Brown & Duguid, 2000).

Communication is a crucial part in knowledge sharing. In fact Van den Hooff and Ridder (2004) state that knowledge sharing is a form of communication. They go on to say that supportive communication is a central condition for successful knowledge sharing. However, Frantz, Marlow and Wathen (2005) in their study on communication apprehension warn that in a formal situation where there are managers and subordinates, communication apprehension possibly happens. Crawford and Strohkirch (2006) add that communication apprehension is disadvantageous for Knowledge Management.

Cramton (2001) argues that useful knowledge will be useless, if group members fail to communicate or share the information. Gruber (2000) adds communication is a means to shared knowledge. As Vries, Pieper and Oostenveld (2009) note knowledge sharing is an exchange in the knowledge process, therefore, it can be assumed that knowledge sharing is communication. Similarly, Lussier and Achua (2013) claim that communication is the process of conveying information and

meaning. The forms of communication can be in person, on the phone, or writing. In person, communication is also called face-to-face communication.

According to Boer et al. (cited in Tsoukas & Mylonopoulos, 2004) knowledge sharing itself can occur face to face or be mediated by technology. According to Priest, Stagl, Klein and Salas (in Bowers, Salas and Jentsch, 2006), synchronous communication such as face-to-face meetings, creates more social atmosphere than e-mail. In face-to-face communication, approximately 70% of the information is actually exchanged nonverbally and this nonverbal information cannot be seen when people do not see each other (Brown, Huettner, & James-Tanny, 2007). Mead and Andrew (2009) support this idea. They claim that one of the keys to successful face-to-face communication is nonverbal behaviour. Lewis (2007) adds that it is important for members to be active and reactive during the interaction in the meeting. In face-to-face meetings the level of formality in communication is low where as in communication via email (including mailing lists) it is actually quite high as illustrated in Dennis Rozell's model of formality in communication (Digenti cited in Conner & Clawson, 2004). According to a study conducted by Skinnerland and Sharp (2011) on the relationship of knowledge sharing and organisational learning, sharing knowledge through face-to-face interaction is most valued and the most clearly supported valued means of sharing while sharing knowledge through IT is more confused and needs more research. Green and Haddon (2009) add to this, by saying that face-to-face interaction builds strong relationships and trust and creates a high level of social capital.

Face to face communication in sharing knowledge is considered more acceptable than communication via IT, such as email. In Asia, the most acceptable form of communication (the heart of knowledge sharing) is face-to-face communication. For Asians, the lack of face-to-face interaction is a serious issue (Lewis, 2007). The adage: 'never write when you can call and never call when you can visit' is mostly adopted in Indonesia (Whitfield, 2016), therefore, mobile phone communication is more popular than email communication. Mesch and Talmud (cited in Katz, 2008) say that the social and cultural differences among groups influence the differences in individual choices of communication methods (face to face or using IT as the communication channel) to suit their purposes. The choice of communication channel, such as mobile phone, Short Message Service (SMS), or e-mail are mainly related to cost.

Even though the role of IT (including email) in knowledge sharing is still under debate, communication using the internet makes knowledge sharing and

collaboration faster and reduces the cost (Mohamed et al., 2006). Laclavík, Šeleng and Hluch (2007) in their article on Automated Content-Based Message Annotator add that email is the second main channel for information exchange among persons in many organisations where knowledge sharing takes place smoothly with the support of internet facilities.

Organisational Factors

Organisational factors are crucial considerations in knowledge sharing research. Organisational factors influence knowledge sharing activities in an organisation. Zin (2013) in her study on knowledge sharing approaches in Malaysian's construction organisations shows that organisational factors play an important role in improving knowledge sharing. She recommends considering organisational factors in knowledge sharing research. According to Daft (2010), there are two types of organisational factors (dimensions): structural and contextual. Structural dimensions may include formalisation, specialisation, hierarchies of authority, centralisation, and professionalism. Structural dimensions define the internal features of an organisation with the use of labels. Contextual dimensions portray the entire organisation, such as by viewing the organisation's technology, organisational culture, and the organisation's goals and strategies. These define the setting which influences and affects the structural dimensions of the organisation. The relationship between structural and contextual factors is interdependent.

Structural Dimensions

Below is the explanation on the structural dimensions of organisational factors. The structural dimensions consist of formalisation, specialisation, hierarchy of authority, centralisation, and professionalism.

Formalisation

The quantity of written documentation in an organisation pertains to formalisation. This documentation can include, terms of reference, regulations, policies, procedures, strategic plans and job descriptions, and may also describe activities and behaviours. Formalisation is frequently measured in an organisation by collating the number of pages of documentation. Large organisations tend to be high on formalisation due to regulatory compliance and governance, often requiring volumes of written rules, policy, and procedure (Daft, 2010). According to Park,

Ribiere and William (2004), KS can be discouraging if the organisation is rule-oriented. Moreover, a study on organisational climate and structure conducted by Chen and Huang (2007) reveals that it will be disadvantageous if an organisation formalises knowledge management. Yulk (2006) adds that this bureaucratic system leads to the existence of autocratic leaders who make decisions without taking into account the considerations of the other members in the organisation. State Polytechnics in Indonesia are an example of high formulation organisations. Daft (2010), however, argues that formalisation is one of the factors which enhances knowledge sharing. Moreover, a study on the influence of organisational culture and structure on knowledge sharing in Malaysian MNCs which involve some key factors such as support and collaboration, learning and development, leadership and commitment, formalisation and centralisation, shows that formalisation contributes positively to knowledge sharing. (Islam, Hasan, & Zain, 2012).

Specialisation

The extent to which organisational tasks are subdivided into individual tasks is referred to as specialisation. When individual employees perform specific tasks only, the organisation's specialisation is extensive, whereas low specialisation would occur when employees perform a wide range of tasks. The distribution of labour is sometimes referred to as specialisation (Daft, 2010). State Polytechnics in Indonesia are high in specialisation as there are several departments and units in each organisation. For example, RS2 has eight departments and several units which serve different supporting tasks. One of the factors that influences the motivation to share knowledge is the diversity of knowledge in the sharing team (Malhotra & Majchrzak, 2004). Gumus and Onsekiz (2007), in their study on the effect of communication style and satisfaction in people/employees sharing knowledge with similar expertise, claim that people are more likely to share knowledge with their own group.

Hierarchy of Authority

The hierarchy of authority defines the reporting and control structure within the organisation (Daft, 2010). Sales-Pardo, Guimera, Moreira and Amaral (2007) in their research on extracting hierarchical organisations of complex systems mention that hierarchy in an organisation portrays an organisation with a chain of order from top to bottom. Riege (2005) claims that bureaucracy and hierarchical level in an organisation influences the motivation to share. Hierarchy is usually depicted in an organisation with a flow from top to bottom. The number of employees reporting to

a supervisor is defined as the “span of control”. Where the hierarchy is inclined to be tall, the spans of control are narrow. Conversely, when the hierarchy is short, the spans of control are broad. Even though bureaucracy is a threat to personal liberties, it remains the most efficient system in an organisation (Weber, cited in Daft, 2010). In fact, bureaucracy is a very effective and efficient organisational form to bring order to a large number of members and manage complex tasks (Daft, 2010)

It is possible that government organisations in Indonesia, such as State Polytechnics, might still need the bureaucratic system due to their size, even though Al-Alawi et al. (2007) defines this as traditional because they have complicated layers and lines of responsibility (bureaucratic structure). It can be concluded that structure in an organisation is suitable when it responds to its own needs at a certain time and in a context as professed by Mead and Andrew (2009). Daft (2010) argues that the vertical structure of order or communication flow in a bureaucratic system may be useful for the organisations’ effectiveness and efficiency. The horizontal structure may not be a perfect one. He claims it has weaknesses, such as determining core processes, which will be time-consuming, need changes in culture, job design, and management philosophy, require significant training, and can limit in-depth skill development.

Centralisation

This bureaucratic system leads to the existence of autocratic types of leaders who make decisions without other members’ consideration in the organisation (Yukl, 2006). Esu and Inyang (2010) say that autocratic leadership has three characteristics, namely: leaders hold authority and responsibility; leaders assign people to clearly defined tasks; and the flow of communication between leaders and subordinates is top-down communication flow. Control is both centralised and decentralised. It is centralised when decisions are made by management, and it is decentralised when decisions are taken by departments (Mead & Andrew, 2009).

Carnall (2003) sees centralisation in bureaucratic organisations as a significant barrier for them to move forward. He states the main problem that happens in large organisations is a ‘system crisis’, one of the causes of which is bureaucracy. As the result of centralisation, the followers (subordinates) in a bureaucratic organisation do not have self-managed teams. They only do what they are told to do, since bureaucracy forms the idea that the doers carry out their work based on their division’s job description (Turner, Marvin, & Minocha, 2006), as long as the environment is stable and consistent, as this is the focus of a bureaucratic culture in

a bureaucratic organisation (Daft, 2008). The control itself is centralised as the decision process is handled by management (Mead & Andrew, 2009). Daft claims that one strong factor that contributes to the development of bureaucratic organisations is the administrative focus (formalisation) which manages an organisation's rational basis and is based on elements such as authority, record, and policy (Daft, 2010).

The influence of hierarchy of authority on leadership in Indonesia's organisations needs to be noted, because, according to Debowski (2006), leadership determines the willingness for knowledge sharing in an organisation. Yusrialis (2012) in his study on bureaucratic culture in Indonesia explains that the bureaucratic system in Indonesia was influenced by Javanese culture. The Javanese culture is hierarchical. Bryant (2003) in his article about transactional and transformational leadership described in his chart that leaders are the main character in the process of creating, sharing, and exploiting knowledge in an organisation. Goleman, Boyatzis and Mc Kee (2003) emphasise that leadership is an important factor in the development of an organisation. Vidal and Moller (2007) wrote about the relationship between leadership and information sharing. They claimed that sharing knowledge or information to subordinates would benefit the leaders as the subordinates would be motivated to implement their leader's decision. Goleman et al. (2003) also assert that leadership is about influence while Margulis (2002) argues that leadership is the ability to inspire others to follow, in order to change an organisation's future directions. Meanwhile, Lussier and Achua (2013) claim that poor leadership can cause problems in knowledge sharing and creation. Leaders in bureaucratic systems, however, may also lead the members in the wrong direction.

Andriansyah (2015) in his publication about visionary leadership for local government in Indonesia discussed leaders as who owned responsibilities, he also describes Siagian's 24 characteristics for ideal leaders, one of which is having educational expertise. Leaders do not merely act as a boss. Leaders look after their subordinates as well. Being knowledgeable is similar to intelligence which is discussed by Lussier and Achua (2013) as one of the requirements of a leader. Studies conducted by Suhardjono (2003) and Irawati (2004) demonstrate that leaders are expected to be knowledgeable. Therefore, they share more knowledge as part of showing themselves knowledgeable (Mintzberg, 1989). Pramono, Hamid and Mukzam (2013) claimed that leaders must lead the staff and show them how to do things in order to achieve the organisation's goal. Leaders know what to instruct

since leaders has access to information. Irawati (2004) argues that a leader is the supplier of information. A leader has access to information because of their position in an organisation. Moreover, Mintzberg (1989) as an expert in management in organisation claims that in order to be the source of information to be supplied to subordinates, a leader must seek for information.

Some experts claim that culture influences leadership style, for example, Mead and Andrew (2009) allege that culture influences the need for structure, the design of the structure, and how to implement it. From this statement, it is evident that it is culture that decides the leadership style needed for an organisation. However, some studies show it is the leadership that creates the culture in an organisation.

In relation to knowledge sharing as communicating knowledge, in Indonesia the term *Bapak* (a name/call for a father) also influences the way leaders and subordinates communicate. This is like a father dealing with children where the communication is normally one way as many leaders tend to give orders or advice. Leaders also tend to use face-to-face interaction as facial expressions and body language are very important in communication for Indonesians (Whitfield, 2016).

Whitfield (2016) argues that Indonesian managers generally rely on indirect and complex methods of communication that include figurative forms of speech, facial expressions, gestures, and other kinds of body language. They need to meet face-to-face when they talk to staff and they do this to avoid misunderstanding. Leaders and supervisors in Indonesia are responsible for keeping the work environment harmonious. Therefore, they usually talk politely and not say things that will hurt the listeners or create chaos. Even though they often have to communicate bad news, they will do so indirectly, supported by body language, tone and gesture. Conversely, subordinates will try to talk face-to-face with their superiors so they will also hear their polite tone and see their gestures and body language.

Professionalism

Where employees are highly trained and have regular ongoing training, that organisation has credibility in terms of professionalism (Daft, 2010). State Polytechnics in Indonesia are the organisations that seek professionalism by providing staff with regular or periodic development programs. Not only that, the qualification required to be a staff member is very high. For example, in order to be a lecturer at Research Site 2, it is preferable to employ well educated university graduates with master degree qualifications. Chinowsky and Carrillo (2007) refer to

these graduates as knowledge workers. Moreover, staff are sent to training, courses, or seminars regularly and most grants include a professional development plan as one of the required programs.

Contextual Dimensions

Another organisational factor explained by Daft (2010) is contextual dimension. Contextual dimensions included in this study are an organisation's technology, organisational culture, and the organisation's goals and strategies.

Organisation's Technology

IT is an important mediating factor in KS (Cheng, Ho, & Lau, 2009). As well as formalisation and centralisation, IT has a strong influence on knowledge sharing (Karasneh & Al-zoubi, 2018). IT in HEIs has changed the way in which the knowledge produced is stored, disseminated, and authorised (Marshall & Rossett, 2000). Gonzalez and Martins (2017) state that the functions of IT in KM are to support the process of knowledge storage, retrieval, and distribution of organisational explicit knowledge. Bloodgood and Salisbury (2001) add that IT also facilitates communication among the members of organisations. The impact of technology on communication for an organisation can lead to less formal organisations, decentralised organisations, improved horizontal coordination, improved inter-organisational relationships, and enhancement of network structure (Daft, 2007). In Asia, however, interaction using IT such as email interaction is not the main choice for communication and is sometimes avoided especially among elders or senior managers, as they tend to choose traditional face-to-face methods to meet people. As a result, if meetings are not conducted regularly, group harmony, and motivation within that organisation may be damaged (Mead & Andrew, 2009).

Sarkar (2012) mentions that the role of IT in HEIs has had and will continue to have an important impact on higher education. IT will become more intertwined with academic life. The technology in this section is Information Technology (IT) or Information and Communication Technology (ICT). However, KM is more than IT, since an organisation does not necessarily need IT to manage its knowledge (Egbu & Botterill, 2002). Tan et al. (2010) agree that KS is the component of KM which puts less focus on the use of IT in organisations. Not all ideas can be shared through IT. Andriessen (2006) explains that people are much more willing to tell their ideas to others than to share them on a database. Face-to-face meetings are more effective

than exchanging documents as stated by Cumming (2003) in a study on knowledge sharing using face-to-face and IT.

Organisational Goals and Strategies

The goals and strategies of an organisation spell out the purpose and competitive methods that are utilised to define it, when compared to other organisations. The extent of operations and relationships with consumers, suppliers, competitors and employees is usually defined by the organisation's goals and strategies. Strategy and goals are often written down and can, for example, be action plans to delineate the organisational goals (Daft, 2010).

Organisational Culture

According to Park et al. (2004), organisational culture is the shared, basic assumption that an organisation has learnt while dealing with the environment and solving problems, and the values are generated and passed onto new members of the organisation. In short, organisational culture represents the way things are done in an organisation. Perez, Peon and Ordas (2004) define organisational culture as basic assumptions and beliefs that are shared by members in an organisation and that operate unconsciously. Schein (2004) explains culture as:

... that was learnt by the group as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems (p. 17).

Culture influences Knowledge Management especially in knowledge sharing (Leidner, et al., 2006). Culture can be a negative influence for knowledge sharing (Rivera-Vasquez, Ortiz-Fournier, & Flores, 2009). Studies conducted by Zin and Egbu (2011) and Razmerita (2016), however, argue that culture can be both supportive and obstructive for knowledge sharing. Therefore, it is necessary to explain culture in this study. Culture itself is a people's way of living. It is the way people identify themselves as a group, separate and different from any other (Guile, 2002, p. 4). Schein (2004, p. 7) notes that 'once we learn to see the world through cultural lenses, all kinds of things begin to make sense that initially were mysterious, frustrating, or seemingly stupid'. Schein goes on to say that culture is more than just norms, values, rituals, behaviour patterns, and traditions. Culture has four other elements of sharing (in a group). The first, structural ability, indicates that when something is cultural, it is stable as it is expressed in the group. The second, depth, is often an unconscious part of a group that makes culture likely to be intangible and invisible. Breadth, the third, influences all aspects of how an

organisation runs its day-to-day tasks. The fourth and final element is patterning or integration in which all rituals, climates, values, and behaviours are integrated.

Organisational culture is essential as it can have a strong influence on company performance (Daft, 2010). Every organisational culture varies due to its differing experiences. Besides this, organisational culture is formed by many factors which may be indirect (macro-environment) or direct. Indirect factors are economic, socio-cultural, political-legal, scientific-technological, natural environment and international events. Direct factors (micro-environment) are consumers and customers, partners and other organisations which may all affect organisational culture (Driskill & Brenton, 2005). Schein (2004, p. 10) adds that 'leadership also influences an organisation's culture'. Chang and Lee (2007) mention that culture consists of visible and invisible characteristics. The visible layer means that culture can be seen through elements such as behaviour, clothing, regulations, or languages. The invisible layer means that culture cannot be seen through the eyes, and includes values, norms, faiths, or assumptions. According to Gruber (2000), the most important layer of an organisation's culture is its underlying beliefs and assumptions (invisible layer).

In relation to knowledge sharing, organisational culture determines the success of knowledge management within that business (Debowski, 2006). Many studies show the strong influence of culture on knowledge sharing such as studies conducted by Ilyasa, Madhakomala, and Ramly (2018), Hung et al. (2011), Kim (2007), McDermott and Dell (2001), Leidner et al. (2006), and Al-Alawi et al. (2007). Other studies conducted by Hung, Lai, and Chang (2011), Jackson (2011), Leidner et al. (2006), and Ipe (2003) also show that culture influences knowledge sharing. Studies conducted by Poul, Khanlarzadeh, and Samiei (2016) and Chang and Lin (2015) shows similar conclusion. Chang and Lin investigate the influence of organisational culture in knowledge management process. They argue that cultural characteristics both contribute positive and negative influence on knowledge sharing. Poul et al. (2016) illustrate cultural attributes in their study on the influence of culture on knowledge sharing. The result of their study displays cultural attributes are important elements in knowledge sharing.

How knowledge is shared must suit the culture (Davenport & Prusak, 2000). It is important to create a culture in an organisation that supports knowledge sharing, for example, by creating culture that: believes in people; is prepared to lead by doing; relies on capitalism and democracy; develops collaboration; supports knowledge creation and sharing; and creates a collective sense of purpose.

However, technological capability cannot be ignored (Taher & Kayaly, 2005). Perez et al. (2004) explain that there are four ways in which culture influences members' behaviour for knowledge creation, sharing, and use. These are, namely, that culture shapes assumptions about what knowledge is; that cultures define the relationship between the individual and knowledge management; that culture creates the context for social interaction; and that culture also shapes the process of knowledge-creation and distribution.

Besides culture, leadership plays an important role in knowledge sharing or the learning process. Aggestam (2006) further explains that leadership and culture influence each other. Aggestam mentions that leadership influences knowledge management. It can be concluded that leadership influences knowledge sharing. Firestone and McElroy (2004) in their study on the relationship between learning organisations and knowledge management argue that leadership and knowledge management influence each other.

Chapter Summary

Knowledge sharing is one of the processes in knowledge management. Knowledge sharing is seen as an intentional behaviour or a conscious activity. Knowledge sharing can also be a forced activity. In order a knowledge sharing to take place, there must be an inter-dependent relationship between motivation (intrinsic and extrinsic), nature of knowledge (tacit and explicit), and approaches to share knowledge (formal and informal). Knowledge sharing is also viewed as a social activity where face-to-face interaction happens as the result of social engagement during interaction. Western approach to knowledge management is a process approach while the Eastern approach is a practice approach

Researchers have different opinions on knowledge sharing and knowledge transfer. Some studies define knowledge sharing as different from knowledge transfer, interchangeable, and complementary. Knowledge sharing creates new knowledge and exploits existing knowledge. HEIs are the places where KS takes place. In Indonesia, Tridharma (three dedications) of HEIs in Indonesia is the core activity and is associated with the creation and dissemination of knowledge and with learning itself. The knowledge in an organisation is created through socialisation, internalisation, externalisation, and combination.

Knowledge sharing, especially through conversation (face-to-face communication or interaction) leads to learning. Some experts say that knowledge sharing is actually learning, which affects human health. A knowledge sharing was

also grounded in major religions, literature shows that Islam and Hindu influence knowledge sharing. The values in Islam faith and Hinduism indicate the importance of sharing knowledge.

Knowledge sharing itself is influenced by organisational factors. Organisational factors include structural dimensions (formalisation, specialisation, hierarchy of authority, centralisation, and professionalism) and contextual dimensions (organisation's technology, organisational goals and strategies, and organisational culture). The most influential factor of all is culture.

Figure 2.1. describes the theory presented in this Chapter. This framework is adapted from Ipe (2003, p. 352) theoretical framework. The framework, however, does not show the influence of communication theory, health, and religion.

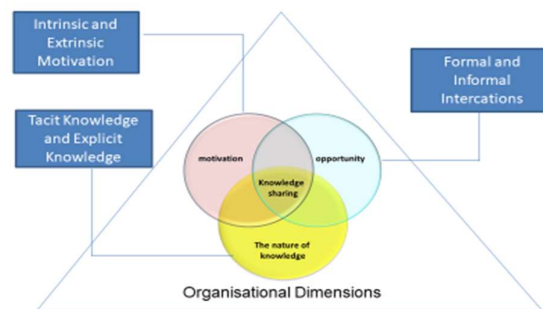


Figure 2.1. Theoretical framework of integrated relationship of motivation, nature of knowledge, and opportunity to share knowledge (Ipe, 2003, p.352)

The following chapter presents the culture and cultural context underpinning knowledge sharing. The characteristics of Indonesian culture is described in order to understand the contextual aspects of this research which is conducted in three provinces in Indonesia.

CHAPTER THREE : CULTURE AND CONTEXT UNDERPINNING KNOWLEDGE SHARING

The discussion of culture and context underpinning this study in this chapter is important. As it was described earlier in Chapter 2 culture strongly influences knowledge sharing. This chapter discusses national Indonesian culture, its influences and importance, as well as local cultures. The first discussion will be on culture itself followed by national culture and local cultures which influence each research site.

Archipelago of Indonesia

Indonesia is located between Asia and the Australian continents and the Pacific and Indian Oceans (Taylor, 2008). Its population is 240 million and it is the largest archipelago in the world consisting of over 13,000 islands and stretching over 5,000km from east to west and 2,000km from north to south (Lewis, 2007; Horton, 2004). There are five major islands in Indonesia: Sumatra, Java, Kalimantan (Borneo), Sulawesi, and Irian Jaya. The rest of the small islands are categorised into the Moluccas (northeast) and Sunda chain, while Bali is a unique island which can be put into a class of its own. The exceptional side of Indonesia is actually the shape of its archipelago and geographic area (Noer, 2003), which is assumed to be the world's largest (Taylor, 2008). Different areas will have their own cultures which can be completely distinct and rooted, as is the case in the cultures of the five major Indonesian islands (Noer, 2003). Indonesians are still strongly connected to their local cultures and they see themselves as different from other Indonesians who come from other parts of Indonesia as explained by Pursika (2009). Mead and Andrews (2009) say that one of the important points regarding culture is that culture is normally suitable for certain groups. Therefore, different groups have different cultures, different groups will give different responses to certain ideas or situations.

There are five major religions in Indonesia: Islam (85.1% in all geographic locations throughout Indonesia), Catholicism (3.5%), Protestantism (9.2%) (mainly in North Sumatra, North Sulawesi, Toraja, Irian Jaya, and the East part of Nusa Tenggara), Hinduism (1.8%, mainly in Bali), Buddhism (0.4%, mainly in Java and among the Chinese), and Confucianism (mainly Chinese) (Noer, 2003b). Taylor (2008) summarises this and states that the Indonesian population is 88% Muslims,

10% Christians. Therefore, even though there are many cultures in Indonesia, it is evident that the majority of them are Muslims and that Islamic values and cultures influence their life.

Culture

The root of culture in an organisation (organisational culture) itself is national culture (Hewitt, Money, & Sharma, 2006) and, as a result, culture in a certain organisation cannot be separated from its national culture (Hofstede, 2001). Therefore, it is important to recognise national culture when discussing organisational culture. Cultural values influence the behaviour of members of a nation, so that when they are working together, they tend to give similar responses toward a certain idea. The values in a national culture are learned unconsciously from childhood. Therefore, national culture and individual personalities such as psychological characteristics, genetic profiles, gender stereotypes, age and social constraints all influence values and behaviour (Mead & Andrew, 2009).

Hofstede (2009) as an expert in national cultural theory, defines several values that may be possessed by a nation and that can describe the culture of certain nations. First is the Power Distance Index (PDI) which is the degree to which the lesser power members in an organisation accept and expect that power is distributed equally. Second is Individualism versus Collectivism. Individualism (IDV) is the degree to which individuals are integrated into a group. The opposite of individualism is collectivism. With individualism, society has loose ties and everyone must look after themselves or their own families. Societies with a high collectivism score are strongly integrated into groups, are cohesive in groups, and their loyalty is unquestionable. The third is Masculinity (MAS) versus Femininity. Masculinity refers to the distribution of roles between genders (female and male). Hofstede's study shows that in many countries, women's values are valued less among societies compared with men's values. The women in feminine countries (mostly in the West) have the same modest, caring values as men. In masculine countries (mostly in the East), there is a gap between women's and men's values. Fourth is the Uncertainty Avoidance Index (UAI). This concerns society's tolerance for uncertainty and ambiguity. It indicates the culture in which the members are either uncomfortable or comfortable in unpredicted situations. The final value is Long Term Orientation (LTO) which consists of long-term and short-term values. In Long Term Orientation, the cultural values are thrift and perseverance, while in

Short Term Orientation, the values are respect for tradition, fulfilling social obligations and protecting one's face (not to humiliate others).

However, there are critics of Hofstede's homogenous characteristics of a country's culture. McSweeney's (2002) review on Hofstede's model of National Cultural Differences suggests viewing a national culture as heterogeneous instead of homogenous, as local ethnic groups create the national culture as well. Hlepas (2013) in an article about the impacts of cultural diversity and ethnic fractionalisation agrees that the assumption that countries are culturally homogeneous is questionable, as sub-national cultures exist in every country. Some countries like Indonesia have many local cultures which contribute to the national one; in fact, there are at least three hundred different ethnic groups in Indonesia (Gott, 2007). Sadzali (2011) in his article in 'Bhinneka Tunggal Ika' states that Indonesia consists of different subcultures, which include aspects such as language, tradition, behaviour, even attitudes and characteristics of each ethnicity. Indonesia is rich in culture (Guile, 2002) and it offers a unique blend of cultural diversity (Horton, 2004).

The national and local culture influence organisational cultures in Indonesia. Subculture influences what and which is to be managed (DeLong & Fahey, 2000). De Long and Fahey's study on the influence of subcultures on knowledge sharing also demonstrates that culture outlines the relationship between individual and organisational knowledge and who controls the knowledge, builds the context for social interaction, and shapes the processes by which new knowledge is created and shared. This study, consequently, accepts sub-cultures as an important aspect in deciding the influence of culture in the organisation.

According to Gott (2002), the motto of Indonesia is 'unity in diversity'. The explanation regarding the contribution of sub-national cultures (local cultures) to the creation of a national one indicates that it cannot be assumed that all Indonesians have similar characteristics even though they have a national culture. Indonesia also has subcultures which are strongly influenced by geographic area. For example, people in west Sumatra have their Minangkabau culture, while people in south Sulawesi have their Makassar culture. This is called *Bhinneka Tunggal Ika*. *Bhinneka Tunggal Ika* is an Indonesian motto which was written in *Garuda Pancasila*, the Indonesian Symbol, and admitted into the 1945 Indonesian Constitution. *Bhinneka* means diversity and *Ika* means one, and the meaning of *Bhinneka Tunggal Ika* is 'unity in diversity'. It is the spirit of Indonesia that allows diversity and unity simultaneously. The diversity is related to that found in

geography, religion, culture, ethnicity, and other elements which show different characteristics. However, even though Indonesians are different in local subcultures, they see themselves as one nation. Because of its diversity, Indonesians are assumed to be part of a plural society.

The fourth principle of Pancasila is closely related to sharing, *musyawarah*, which is discussed by Hanafi (2013) and Kawamura (2011) in their studies both on consensus and democracy in Indonesia. Kawamura (2011) describes *musyawarah* as Indonesia's traditional decision-making rule where a discussion is aimed at achieving a consensus. Both Kawamura (2011) and Hanafi (2013) explain that the sharing of information is conducted in order to reach consensus and support or agreement on new programs.

Bhinneka Tunggal Ika encourages the balance between diversity and oneness and does not exhibit the differences too much. Yet it does not assume all as one only, completely ignoring the differences. Indonesians embrace the national culture because Indonesians see themselves as all Indonesians (Pursika, 2009). However, when Indonesian culture is discussed, local cultures cannot be ignored. Horton (2004) agrees that Indonesians see themselves as one, despite the diversity. He says that Nationalist sentiment was given voice by the All Indonesia Youth Congress in 1928: 'one nation-Indonesia, one people-Indonesia, one language-Indonesian' describes the oneness of Indonesia and this sentiment unites the differences of subcultures.

Even though Hofstede's work faces challenges regarding his uniformity on the culture in a country, his work on national culture provides references regarding national culture, with a highly valuable insight into the dynamics of cross-cultural relationships (Jones, 2007). Hofstede's observation on Indonesian culture is still seen as closely present in Indonesian culture. Therefore, this study also uses Hofstede's theory on culture as referenced when discussing Indonesian National culture.

Culture represents certain groups. Mead and Andrew (2009) explain that culture is normally suitable for certain groups (different groups have different cultures and will give different responses to certain ideas or situations); culture is learned (interaction with others, negotiation, and solutions to conflicts are all learnt); culture has value (assumptions about how society should behave). The value can be observed from society's behaviour. It is passed on first from family (from the eldest to the youngest) while learning is influenced by friends or school mates. Culture, in this sense, includes systems of values; and values are among the building blocks of the culture. Meanwhile, Daft (2010) states that culture is a set of

values, norms, guiding beliefs, and understandings which are shared by members of an organisation and are taught to new organisational members. Another expert in culture whose work has been used widely, Edgar Schein, says that culture is a naturally traditional force, but it grows and can be changed, and can be seen in the form of behaviour, norms, and values (Schein, 2004). According to Lucas (2006) in a study on the role of culture in knowledge transfer, in collectivist culture, the members encourage groups, collective interests, and are more inclusive, which encourages a more successful knowledge transfer than with individualistic members (Lucas, 2006). Daft (2010) adds that cultures are needed to integrate members so they know how to work together, how to communicate, and how to behave, and to adapt to the external environment (how to meet the outsiders' goals). Culture also influences leadership (Aggestam, 2006).

Indonesian Culture

Indonesian national culture itself is influenced by several factors. According to Mead and Andrew (2009), factors that influence national culture and individual personalities are: beliefs, political systems, religion, technology, and artistic culture. This study, however, will not discuss the influence of artistic culture. Indonesian cultures are influenced by beliefs that come from local cultures as the result of *Bhinneka Tunggal Ika*. It is also influenced by the political system, complicated by significant political development.

Religion influences the daily life of Indonesians. Therefore, in this research, the influence of religion must be taken into account. Religion, in particular Islam, impacts upon many features of Indonesian culture. Religion is seen as a socialising agency and strongly influences Indonesian social life and culture (Noer, 2003). Mead and Andrew (2009) note that religion articulates and influences the culture so that religion indirectly influences the national culture. The majority of Indonesians claim to belong to one religion (Horton, 2004), which is Islam. Lewis (2007) also claims that it influences Indonesian's behaviour and attitudes, and Islam affects their social life. He even stresses that Indonesia is the world's largest Islamic country. According to Gott (2007), Horton (2004), and Guile (2002), more than 85% of Indonesia's population are Muslims. Noer (2003) in his writing on Islam and politics explains that Islam affects education, economics, and social life. Moreover, according to Muslims, Islam is a way of life and it means that all aspects of life, including social life, knowledge and technology are influenced by Islam. The role of religious leaders (such as *ulama*, *kyai*, or *ustadz*) in Indonesia is really important

and dominant. In Islam, it is important to live in harmony and solve any problems using *Musyawah* as *Musyawah* (discussion to achieve agreement) and tolerance (open minded) to someone else's ideas are suggested in Islam (Noer, 2003).

Muslims and non-Muslims in Indonesia believe that whatever they do, it has to be based on religion. The strong influence of Islam is also the result of how Islam sees culture itself. Culture and Islam influence each other as long as the culture is not against Islam. It can be assumed as being part of Islam. According to Mead and Andrew (2009), religion articulates and influences the culture so that religion influences the national culture indirectly. Mead and Andrew (2009) continue to say that technology allows people to see other group's cultures and they may learn from them, and take them as part of their own group's culture. Another aspect that influences Indonesian national culture is Javanese culture (Groenendael, 2008). Yustanti and Pamungkas (2016) said that Javanese culture strongly influences organisations outside Java. Yuastanti and Pamungkas in their study on the traditional Javanese fashion style of Tien Soeharto (the wife of Soeharto, former president of Indonesia), explained that Javanese culture has an overriding influence over the entire archipelago. It can be seen from Whitfield (2016) who states that relationships, responsibilities and obligations that Indonesians impose are based on the Javanese culture. Guile (2002) stated that although Java is the smallest of the five largest islands in Indonesia, Javanese culture has dominated the culture of Indonesia.

The Result of the Influences of the Reform era, Islam, Local Culture, Javanese Culture, and Technology on National Culture

According to Hofstede's cultural dimensions, the Indonesian Power Distance Index is at 78, with the average score being 71 for many Asian countries. This is the highest level in the region and indicates a detrimental inequality of power and wealth in society which is accepted as cultural heritage. Indonesia's Uncertainty Avoidance dimension from Hofstede's cultural dimensions is 48 (average score for many countries in Asia is 58) which shows society's low level of tolerance for uncertainty. To minimise the level of uncertainty, rules, regulations, policies, and laws are implemented in order to maintain control of many aspects of society. As a result of this high level of Uncertainty Avoidance, Indonesians do not readily accept change and they refuse risk (Hofstede, 2009). According to Hofstede, the Indonesian Individualism score is 14 and it is the lowest score (Asian score is 23). It demonstrates that Indonesian society is Collectivist and that makes them committed

to a group, either to family, or other groups they are involved in. Loyalty is paramount in collectivism. A high score in the Uncertainty Avoidance and Power Distance measures creates a society which is rule-oriented with laws, rules, regulations and controls to reduce the uncertainty and inequality in power as an accepted norm. The further explanation on the effect of High Power Index, Collectivism, high score in Uncertainty Avoidance and Masculinity. (See Appendix A)

Local Cultures

There are three subcultures or local cultures underpinning the context of this study: Javanese, Malay, and Bali cultures. The description of these subcultures is supported by maps which show the location influenced by the subcultures. The explanation on subcultures is described in Appendix B. (See Appendix B)

Chapter Summary

Culture is very important in knowledge sharing study. Culture in an organisation is influenced by National culture and subcultures/local cultures. Hofstede describes Indonesian culture as High in Power Distance Index, Collective, Masculine, high in Uncertainty Avoidance Index. Even though Hofstede's description indicates that Indonesian culture is homogenous, the explanation of Indonesian's motto *Bhinneka Tunggal Ika* balances the description. The motto describes Indonesia as both diversified and one. Religion strongly influences Indonesia with Islam as the dominant religion.

As the result of Indonesian culture's influence in an organisation, firstly, structural position influences the relationship between leaders and subordinates. Indonesians respect leaders and do not want to show disrespected action. Secondly, Indonesians are collective. Therefore, they tend to keep the harmony in a group and save each other's face. Thirdly, males are dominant. Fourthly, Indonesians prefer routine, no conflict and work based on regulation.

Figure 3.1. below illustrates the possibility of religion and health (as discussed in Chapter 2) influence knowledge sharing at State Polytechnics in Indonesia. Chapter 3 and Appendix B describe the influence of religion in many aspects in Indonesia. Figure 3.1. is adapted from Ipe (2003, p.352) and the possibility of religion and brain health affect knowledge sharing.

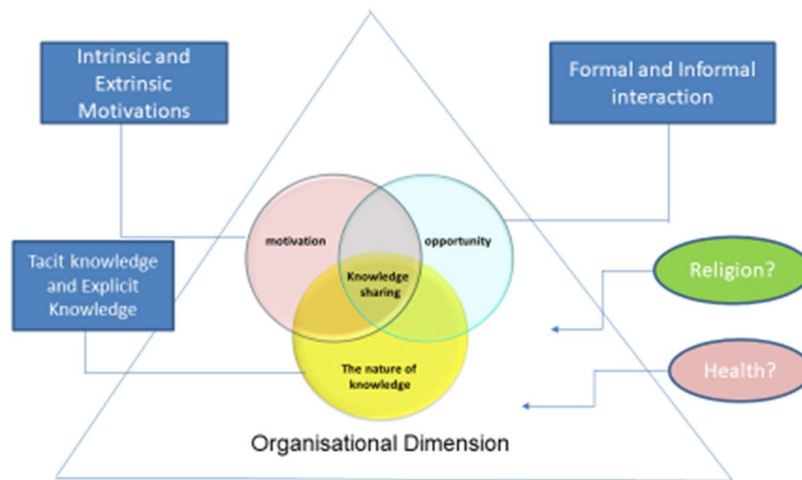


Figure 3.1. Adapted from Ipe (2003, p.352) with the possibility of religion and brain health affect knowledge sharing.

The following chapter presents the methodology applied in this research in order to collect the data. The chapter discusses the research design, research sites and participants selection, data collection, data analysis, the trustworthiness of this research, as well as the ethical consideration.

CHAPTER FOUR : METHODOLOGY

Previous chapters have provided the background and problems in this study, the description on the research sites, the reviews on literature, and the explanation on culture and subcultures which influence the research sites. Chapter 4 explains the outline of the methodology of how this study was conducted in order to answer the research question: How does Knowledge Sharing occur at State Polytechnics in Indonesia? This major research question includes the objectives to find the answer on specific questions: (1) what knowledge is shared at State Polytechnics in Indonesia, what approach is used, and what organisational factors influence the knowledge shared and the approach to share knowledge?; and (2) what factors motivate the knowledge sharing and what organisational factors influence the motivation to share knowledge?

Rajasekar, Philominathan and Chinnathambi (2013) argue that research methodology is a method of systematically solving the research problem. Research methodology connects the procedures and the logic or rationale behind the methods the researcher uses. The methodology consists of a set of steps or a collection of procedures, techniques, tools and processes that help the researcher to formulate the research questions, the method to be used for data collection, and the data analysis procedure. Moreover, according to Silverman (2010), methodology is, 'a general approach to studying research topics' (p. 13) and defines how the researcher, 'will go about studying any phenomenon', (p. 107). In this current study, the phenomenon is knowledge sharing within State Polytechnics in Indonesia.

This chapter is divided into five sections. The first section discusses the methodological approach, which is qualitative. The sections that follow discuss the methods that were used in this study: the research design, the process of participant selection, data collection techniques, data analysis procedures, ethical issue, as well as validity and reliability.

Paradigm: Qualitative Research

The decision of whether to choose quantitative or qualitative methods is usually based on the practical matter of what works best (Silverman, 2010). As the aim of this research was to investigate knowledge sharing practice at State Polytechnics in Indonesia, a qualitative approach was selected as qualitative

methods enable the researcher to better interpret the complexities and realities of given situations and gain richer understanding of the context and phenomenon under investigation, namely, in this study: How KS occurs at SPs in Indonesia? This research question specifically asks 'how' and not 'how many'. The *how* question in this research aimed to explore the experience of individuals and how they experience knowledge sharing and their perspectives of it. Berg (2009) argued that if the research was concerned with exploring people's everyday life, then a qualitative approach would be the favoured method. If the research was concerned with exploring people's everyday behaviour, then the qualitative approach would be favoured (Silverman, 2010). The qualitative researchers' goal is to better understand human behaviour and experience. They try to capture the processes by and in which people interact and create meaning (Bogdan & Biklen, 2003). The theoretical perspective (paradigm) used in this research was Interpretivism. Interpretivism as this study's theoretical perspective 'allowed the researcher to view the world through the perceptions and experiences of the participants' (Thanh & Thanh, 2015, p. 24). Interpretivism is a Qualitative Research (Collis & Hussey 2003) approach. This study explored the participants' points of view (Wood, 2006; Creswell, 2008), their beliefs, feelings, or experiences (Gay & Airasian, 2000; Merriam, 2009; Punch, 2005; Wood, 2006) and relied on the information from data (Johnson & Christensen, 2000).

The central idea of qualitative research is based upon the way in which people are studied, are understood and their social reality is interpreted (Liamputtong, 2009; Snape & Spencer 2003). This is because qualitative research provides the kinds of information and understanding needed and includes: contextual (describing the form or nature of what exists); explanatory (examining the reasons for, or associations between, what exists); evaluative (appraising the effectiveness of what exists); and generative (aiding the development of theories, strategies or actions) (Ritchie, 2003). Snape and Spencer (2003) added to the argument that the distinctive characteristics of qualitative research are several. First, this type of research aims to provide an in-depth and interpreted understanding of the social world of the research participants by learning of their social circumstances, experiences, perspectives, and histories. Second, qualitative samples are small and purposively selected. Third, the relationship between researcher and participants is close during data collection. Fourth, the data is very detailed, information-rich, and extensive. Fifth, the analysis is open to emerging concepts and ideas and also produces detailed description and classification. Finally, the output tends to focus on the

interpretation of social meaning through re-presenting the social world of research participants (Snape & Spencer, 2003 in Ritchie & Lewis, 2003). Therefore, this study adopted a qualitative approach as its methodological approach in order to answer the research questions.

There are various views regarding the best approach to studying culture. Gruber (2000) suggested that a study which includes organisational culture requires qualitative research methods. Organisational culture is one of the organisational factors (dimensions) discussed in this research. However, some research concerning organisational culture has applied quantitative methods, such as that carried out by Jo and Joo (2010) and Park et al. (2004). Hewitt et al. (2006) used both quantitative and qualitative methods. It appears that there is no agreement on methods for measuring organisational culture. Schein (1999) suggested that the survey instrument, even though able to identify cultural artefacts and values, fails to disclose the tacit shared assumptions in an organisation (Park, et al., 2004). Consequently, as this research aimed to explore the beliefs, feelings, and experiences of the participants related to organisational culture in their organisation, it required the use of qualitative methods.

Another reason for using a qualitative approach in this study was the lack of focus on both KS in SPs and on the information gap related to how KS at SPs in Indonesia occurs. Merriam (2009) suggested that this approach is useful when there is a lack of theory or the existing theories fail to explain the phenomenon. This characteristic of the qualitative approach makes a qualitative research process inductive. This means that the theories are constructed from the data collected. Thus, this research applied a qualitative approach as this study constructed the theories from the data which had been collected.

Research Design

According to Creswell (2012), research design engages with a set of specific procedures within the research process that includes data collection, data analysis, and report writing (after the data collection is conducted). Marshall and Rossman (2011) suggested adding a time line to the research design section. Epistemology and ontology in this research are explained below as part of the research design of this study.

This study adopted social constructionism as the epistemological perspective. As suggested by Soini and Kronquist (2011), epistemology is a tool for the researcher to formulate the questions and determine the means of answering them.

Soini and Kronquist (2011) quoted Joseph Maxwell's keynote lecture on epistemology as something which is, 'not a stance you have to decide beforehand or to follow literally regardless of the demands you meet in your study' (p. 6). This study explored the knowledge shared by the Indonesian State Polytechnics lecturers and the approach applied to knowledge sharing. It also examined the factors that motivate KS, what knowledge is shared, the types of knowledge staff members share, and the organisational factors which influence the KS process from the perspective of participants' experiences, their points of view, their beliefs and feelings. Therefore, the researcher's perspective of the nature of knowledge in relation to the research problem influences the formulation of the questions and the ways to answer them. Consequently, social constructionism was chosen as the epistemological perspective in order to realise both the purpose and aim of the study.

Nightingale and Cromby (2002) in their paper about anti-realism claims about the nature of constructionism, concluded that constructionism can provide the reality of the knowledge through the sharing of experience or description which is co-constructed to represent the reality and not by deciding what the reality is according to the researcher's view. Knowledge is represented in meaning which is co-constructed in social interaction. Similarly to Nightingale and Cromby's (2002) views on the importance of 'social interaction' of constructionism, Holland (2006) argued that constructionism focuses on the context of the participants' collective experiences or knowledge. Andrew (2012), however, argued that the terms constructivism and social constructionism have a tendency to be used compatibly. Charmaz (2006) for example, tended to use the terms constructionism and constructivism interchangeably. Glasersfeld (1995) wrote about radical constructivism and his idea has been widely used until now as a reference by today's researchers. He maintains that constructivism stated that ideas and perception were the 'construction of the observer'. This idea is similar to those of Talja and Tuominen (2005) and Young and Collin (2004) who explained constructivism and suggested that the world of experience of each individual was mentally constructed through mental processes whereas social constructionism had a social focus rather than an individual emphasis. This research applied constructionism as its epistemology, not constructivism, as this study aimed to understand the phenomenon under investigation through the participants' descriptions or experiences which were the result of their social interactions.

Constructionism, according to Crotty (1998), views meaning (knowledge) as the result of engagement with reality in the world, which is constructed not discovered. Crotty argued that different people might construct meaning in a variety of ways. The theoretical perspective which is consistent with the purpose and aims of this study is interpretivism as this theoretical approach also holds that reality is not determined but is socially constructed (Crotty, 1998; Kelliher, 2005; Merriam, 2009) and is interpreted by the researcher. Crotty described it as an approach that deals with a, 'culturally derived and historically situated interpretation of the social life-world' (2010, p. 67). Also, Williams (2000) stated that interpretivism is a strategy which interprets meanings and the actions of actors based on their subjective views.

In this study, the researcher used multiple case studies to help determine where to collect the data.

According to Berg (2009):

Case study is an approach capable of examining simple or complex phenomenon, with units of analysis varying from single individuals to large corporations and businesses, it entails using a variety of lines of actions in its data-gathering segments and can meaningfully make use of and contribute to the application of theory. (pp. 317-318)

Berg continued that in a case study, a researcher may assess the social life of individuals and their entire background, experiences, roles, and motivations for their behaviour in society. The information gathered in a case study is also extremely rich, detailed, and deep (Berg, 2009). This study utilised a collective (a kind of comparative case study) case study approach. According to Baxter and Jack (2008), a comparative case study is when, 'a study contains more than a single case' (p. 550). This approach allows the researcher to analyse within the case and across the cases in order to understand the similarities and differences between them. A collective case study (also known as a multiple-case study, cross-case study, comparative case study, and contrasting case study) involves an extensive study of several cases (Berg, 2009). Yin (2004) stated that a collective case study will strengthen the case study findings. This collective case study involved an extensive collection and analysis of data from three Polytechnics. Bogdan and Biklen (2006) suggested conducting the fieldwork at one site at a time rather than collecting data from several sites simultaneously, and this is the procedure followed.

Research Sites and Participant Selection

This section outlines the procedures used to select research sites and participants.

Research Sites

Data were collected from Polytechnics on three islands in Indonesia: Kalimantan, Java, and Bali. Since this research recognises local culture as a shaping feature, as is described in Bradshaw (2010), the researcher chose the most influential cultures in Indonesia, which are Malay (represented by one of the provinces in Kalimantan), Java (represented by one of the provinces in Java), and Bali (represented by one of the provinces in the east part of Indonesia). One State Polytechnic in each research site (province) was selected: Research site 1 (RS1), Research Site 2 (RS2), and Research Site 3 (RS3). These research sites were chosen to represent Indonesia as a whole. The profile of these three research sites can be seen in Appendix I.

Participant Selection and Recruitment

For the purpose of this research, one Director and one Director's Assistant were chosen from each research site. The researcher also chose lecturers who were active in a unit and lecturers who did not have a decision making role (a structural position) or activity in a unit (such as in maintenance unit or entrepreneurship unit). The total number of participants in this study was 28. As qualitative research tries to present a deep insight of information or situations, 25 participants are considered to be sufficient (Cresswell, 2008; Johnson & Christensen, 2000; Ritchie & Lewis, 2003). Therefore, 28 participants were adequate for this research to facilitate a deep analysis.

Participants were selected using a purposive sampling strategy. The samples in qualitative research are mainly purposive samples (Patton, 2002), which involves establishing the sampling criteria for people, cases, situations, and/or settings before the researcher enters the research field (Charmaz, 2006). Purposive sampling is where the researcher, 'intentionally selects individuals and sites to learn or understand the central phenomenon under investigation' (Creswell, 2008, p. 214). According to Punch (2009), purposeful sampling is sampling in a deliberate way with some purpose or focus in mind. In selecting the participants, the researcher

applied one of the purposeful sampling strategies, which is snowball sampling. Purposive sampling is one of the nonprobability sampling types (Babbie, 2008).

The researcher used a gatekeeper in snowball recruitment to approach participants. A gatekeeper is someone who has power and access to the setting and participants (Holloway, 2008). There were a number of reasons for the choice of a gatekeeper. The most significant and not equal in status, and the fact that the position held in an organisation plays a major role in decision-making (Whitfield, 2016). Moreover, this research involves elites, who, according to Brinkmann (2009), are persons who are leaders or experts or who hold powerful positions at each research site. However, it is not easy to contact these people especially if they are unknown to the leaders. A gatekeeper was also needed to contact the high ranking personnel at each research site as the Indonesian culture favours personal connections as a means of introduction. For the purposes of this research, access to the 'experts' who occupy the upper echelons of various hierarchies, would not be possible without personal introductions from others (Whitfield, 2016). These introductions within and between hierarchies enabled the researcher to identify and access the relevant participants and the subordinates of the high position personnel. It provided the additional benefit of an implied endorsement of the study and the 'blessing' of those with positional power (Brinkmann, 2009).

The researcher approached the Director of RS2 as he was known to her, and asked them to recommend two active directors from RS1 and RS3 and invite them to participate in the study and be involved in the interviews at the Polytechnics that they led. This snowball sampling required researchers to initially select a few research participants and request they recommend or nominate others who met the criteria of research participants and who also agreed to participate (Babbie, 2008; Liamputtong, 2009).

The second reason for using a gatekeeper in snowball recruitment was the distance involved. According to Liamputtong (2009), and Brinkmann (2009) this technique was very useful for finding participants who were, 'hard to locate' in order to gain the experience of a wider range of participants with creative attributes or characteristics necessary in the study. Due to the distance between each research site, this was a cost effective method, as the researcher did not need to approach all participants at the initial recruitment, as suggested by Gruppette (2005).

The third reason for the use of a gatekeeper in snowball recruitment was this strategy ostensibly reduced researcher bias and created an informal network of communication. With the gatekeeper contacting potential participants, it was not

necessary for the researcher to make random contact which might have resulted in rejections and, thus, the cost of contact (such as phone cost and wasted time) was reduced.

This method of participant's selection had advantages and disadvantages. According to Gruppetta (2005), all recruitment methods have their positive and negative aspects. This technique of participant selection, snowball sampling, needed negotiations regarding privacy, as the agents or gatekeepers knew the participants' identities although not their interview responses. Other negative aspects were time factors (the time used to contact the agents and to wait for the agents' responses), the possibility of coercion (from agent to participants), the inability of the researcher to select participants, and the closed group phenomenon. However, snowball sampling was applied in studying various classes of deviance, sensitive topics, or difficult-to-reach populations. In addition, this research involved elites at each research site. The elite interviewees were considered to be those who were leaders or experts or those who hold powerful positions (Brinkmann, 2009). In Indonesia, the problem in conducting interviews involving 'elites' was obtaining access to the interviewees. However, the researcher was able to overcome the difficulties as the researcher understood the nature of interaction with elites and recognised the cultures in each research site. Therefore, the approach to the gatekeepers resulted in a strong relationship with the gatekeepers and the researcher could reach other participants.

Snowball sampling was also useful to reduce the possibility of coercion by the researcher. This occurred because in the initial process of recruitment, no sensitive data were available to the researcher. So, in this study, the researcher had no information concerning the personal life of the participants. Thus, this snowball sampling method reduced researcher bias and created an informal network of communication.

Data Collection Techniques

The data were collected through interview and document analysis. The researcher used face-to-face, semi-structured interviews with participants. According to Holstein and Gubrium (2003), the interview is a means for collecting empirical data about the participants' world by talking to them, while Kvale (2007), indicated that the interview was the research activity during which knowledge was constructed in the interaction between interviewer and the interviewee. Interviews were used to elaborate the participants' perception or experience (Silverman, 2010)

and interview is considered a main technique for data collection in qualitative research (Englander, 2012). Therefore, even though, according to Bogdan and Biklen (2003), data collection techniques could include interviews, observations, participant observations, or reviewing various documents in order to answer the research questions, this researcher used interviews as the tool, because, interviews are one of the most ordinary and extraordinary ways to explore someone's experience (Richards, 2005).

The researcher used interviews to collect data in order to access the participants' experiences of *how* the participants in State Polytechnics in Indonesia shared knowledge. Darlaston-Jones (2007) tried to connect the relationship between interview as a method in qualitative research and constructionism. Darlaston-Jones (2007) argued that a qualitative research interview is an appropriate technique for data collection in constructionism as the technique enables the researcher to 'seek a deeper understanding and to explore the nuances of experiences' (Darlaston-Jones, 2007, p. 25). King and Harrock (2010) also believe qualitative interviewing is an important technique in collecting data. In addition, according to Mason (2007), if the ontological perspective of a study holds that people's knowledge, views, understanding, interpretation, experiences and interactions were meaningful properties of social reality, and the epistemological perspective admits that a meaningful way of generating data for these ontological perspectives was to talk interactively with people, then logically the best technique to obtain the data is through interviewing. Therefore, even though it is a complicated process, the information needed will be gained eventually. According to the constructionist approach, the interviewer and interviewees are actively engaged in the construction of meaning (Silverman, 2010). Silverman went on to say that interviews could be used to elaborate the participants' perceptions and/or experiences. The researcher employed three types of interviews, discussed below, to collect the data: the pre-interview, the interview proper, and the post-interview.

Pre-Interview

The pre-interview section includes the explanation on the process before the researcher met the participants, at the research sites, and on the interview day.

Before Meeting the Participants

After potential participants were recruited by the gatekeeper, the researcher made personal contact with them via email, or telephone and followed up with a

formal letter to obtain the relevant consent to conduct the research. A letter of introduction (Appendix C), an informed consent (Appendix E) form, and information sheet explaining the confidentiality and anonymity procedures as well as the objectives, topic, schedule of the research, plan to record the interviews (Appendix G) were also attached to the letter. The informed consent document consisted of a written statement that explained aspects of the study to participants and asked for their voluntary agreement. Neuman (2011) explained that informed consent included: a brief description of the purpose and procedure of the research; the duration of the study; a statement of the risks or of any discomfort that may occur; a guarantee of anonymity and confidentiality of records; the identification of the researcher; the statement that participation is voluntary; a statement of alternative procedures that may be used; a statement of any benefits or compensation provided to participants; and an offer to provide a summary of findings. Anonymity referred to the non-disclosure of the participants' identity (Neuman, 2011). The letter of introduction and the information sheet was to facilitate the understanding of the gatekeepers and the research team regarding the purpose and procedure of the research and to enable them to give informed consent (Ritchie & Lewis, 2003).

The informed consent was gained before the interviews took place. Informed consent should be obtained from participants either verbally or, ideally, in written form with their signature (Byrne cited in Seale, 2004). The research questions were not attached to avoid elements of groupthink/agreement. For this reason, the questions were handed to each participant individually on the interview day. This ensured that the research preserved objectivity and achieved validity.

At the Research Site

Once the researcher had been granted permission to conduct the interviews, they visited the research site in order to make a connection and initial contact, decide upon the location of the interviews, and seek the participants consent to record the interviews. According to Darlington and Scott (2002), the interview processes are: finding and selecting participants; making a connection (establishing rapport as the development of trust between interviewer and interviewee is very important); making initial contact (preferably face-to-face meeting); interviewing, recording, and finishing. Meanwhile, Bryman (2016) listed the practical issues in conducting an interview: preparing an interview guide (question list); organising the location of the interview; and recording it. Interview guides were prepared

before the interviews began and were approved by the Social and Behavioural Research Ethics Committee. Silverman (2010) suggested having an interview guide that includes the date/time, name of participant, and place of interview. Nevertheless, to maintain the participant's confidentiality, the interview guide did not record the participant's names, only their codes. Even the research site was in code.

Considering cultural appropriateness, the researcher first met the Director when visiting each research site. This was to plan where the interviews with the Director and his subordinates would take place. Following that, the researcher met the other participants individually to collect the signed consent forms. The researcher gave the same information to each participant concerning the interview guide and a brief overview of what the research was about, confidentiality and anonymity, and the recording process. Preliminary information must be given to familiarise the participants with the research topic so they have a comprehensive understanding of the research (Creswell, 2008; Ritchie & Lewis, 2003).

The researcher chose the participants' workplace (office) as the location for the interviews. King and Harrock (2010) reported that the physical space of the interview setting seems to influence the process. Researchers need to consider the interview setting, recording, and building of rapport (building trust). The university or workplace is a sound choice for interviews. I ensured that the setting was physically and psychologically comfortable, to create a quiet, private atmosphere which is extremely important during interviews, so both the researcher and interviewee feel relaxed and to facilitate accurate recording.

On the Interview Day

The participants came into the interview room one by one based on the schedule. The researcher checked the interviewee's attendance and recorded their details. The duration of the interview was approximately 60 minutes for each participant with 15 minutes break in between, in order to give the interviewer time to prepare the question sheet and recording equipment for the following interview. As suggested by Silverman (2010), before starting an interview, the researcher introduced herself, asked permission to record, and stated the purpose of the study again. The total time duration at each research site was approximately 540 minutes.

Time management was very important as the interviews were conducted during the study/free periods and this research had been structured so that it would not impinge on participants' daily activities too much, as participants were

also lecturers with teaching schedules. The interviews took about one day (20 hours) at each site. Creswell (2008) stated that a research interview must not disrupt the research site and that the length of interview, the time and days must also be set and predicted. When the interview was completed, the participants left the room. The researcher designed the questions based on the theories and the focus of the research. Additional questions emerged during the interview as well. This happened because the researcher needed to gain further information to confirm the answers that the interviewee had given and to clarify answers.

After the Interview

After the interview process was completed at each site, participants were invited to meet again as a group. In order to promote an ongoing professional relationship, the researcher used this opportunity to thank the participants and also the Director. At the meeting, the researcher asked participants if they had any questions about the interviews and informed them that the research results would be sent to them in summary form. Finally, the researcher sent a transcript of each interview via email to each participant so they could check to ensure it was a true record. None of the participants disagreed with the interview transcriptions.

Semi-Structured Interview

The semi-structured interview was used in this study in order to gain a deeper insight while remaining on track (Creswell, 2008; Johnson & Christensen, 2000; Ritchie & Lewis, 2003). Semi-structured interviews were expected to capture the complexity of the knowledge sharing process. Creswell (2008), and Ritchie and Lewis (2003) claimed semi-structured interviews encouraged the participants to speak personally and freely, while simultaneously covering the research issues. This form of interviewing balances what was interesting both to the researcher and research participants (Silverman, 2010).

The reason the researcher used individual face-to-face interviews was due to the nature of relationships in Indonesia. As mentioned previously: "Never write when you can call and never call when you can visit" (Whitfield, 2016). This ideal was important especially for the elite participants and became another reason why the researcher used face-to-face interviews. This research involved directors and lecturers, who had different structures/ranks within their polytechnics, and who possessed High Power Distance (PD). The effectiveness of focus group interviews would therefore be compromised as free un-coerced interactions were needed to

ensure the freedom of speech was not limited. A fundamental ethical principle is: never coerce the research participants (Neuman, 2011).

The researcher conducted some mobile telephone interviews due to distance and time. These were recorded using a digital recorder. The telephone interview had advantages, as it reduced staff requirements such as an interview assistant, minimised bias, and assured quality, as well as enabling the researcher to contact participants in geographically diverse locations in an economical manner (Berg, 2009). Telephone interviews are accepted as qualitative research and are employed to reach subjects in remote places (King & Harrock, 2010). The nature of relationships related to communication as mentioned above was also taken as one of the considerations: As the researcher could not meet the participants face to face, the researcher chose the second option, phone interaction.

The interviews were conducted in Indonesian to avoid misunderstanding and also to enable the participants to focus on the answers, not the language, as was suggested by Brown (2001) and Liamputtong (2009). Therefore, the first transcripts of the interview results were in Indonesian. The interviews were recorded on digital audio recorders (Silverman, 2010) and stored on flash drives. The researcher used digital audio recorders as they give excellent sound quality, can record longer without disruption (King & Harrock, 2010; Kvale, 2007), and allow researchers to transfer the interview to a computer to be stored (Liamputtong, 2009). Note-taking during an interview was sometimes needed to record the important points reported by the participants (King & Harrock, 2010).

Data Analysis Procedure

The data analysis in this study followed several procedures. According to Creswell (2012), there are six steps, not always sequential in analysing data for qualitative research. These include: coding the data; developing descriptions and themes; representing the findings through narratives and visuals; interpreting the meaning of the results by reflecting personally on their impact; then analysing the results in relation to those in the literature that might inform the research outcome. As Darlington and Scott (2002) indicated, any audio-recorded data needed to be transcribed. All oral interviews were transcribed verbatim in Indonesian by the researcher. The researcher then translated the transcripts into English, which Merriam (2009) calls 'back translation'. The data were then coded, analysed, and stored on a Flinders University computer.

In order to analyse the documents, the researcher used content analysis, which is a systematic procedure used to describe the content of the document (Merriam, 2009). It is a specific technique in qualitative research for data collection (Cresswell, 2012; Silverman, 2010; Merriam, 2009). Content analysis was suitable since this research also aimed to investigate the explicit knowledge shared in the organisation: that is, the types of knowledge shared particularly in relation to socialisation, internalisation, externalisation, and combination. Merriam (2009) argued that documents could be written in the form of visual, digital, and physical material relevant to the particular study. They might also include public records (such as programs, procedures, policies) or personal documents (letters or diaries) (Creswell, 2012; Merriam, 2009). In this study, the researcher examined documents such as emails and mailing lists, training or course reports, forwarding letters, policies, procedures, and equipment/machinery manuals.

In analysing the data from each research site, the researcher employed hand analysis. According to Creswell (2008), hand analysis means that researchers, 'read the data, mark it by hand, and divide it into parts' (p. 246). He added that this technique brings the researcher closer to the data and enables a hands-on feel for them. Merriam (2009) added further to this process suggesting that first, the researcher undertake the analysis procedure outlined above, called within-case analysis, where each case is treated individually and comprehensively (Merriam, 2009). Since the employed approach in this study involved a multiple-case study of three State Polytechnics, the researcher conducted a cross-case analysis, which is an analysis that involves an examination of more than one case (Merriam, 2009; Babbie, 2008; Creswell, 2007). The researcher compared and contrasted the data found from all three research sites. By doing a cross-case analysis, the differences and similarities of the knowledge sharing processes used in the research sites were established. Khan and Van Wynsberghe (2008) said that cross-case analysis is a research method which entailed a comparison of commonalities and differences in the events, activities, and processes. This approach can mobilise (compare, contrast, synthesise) knowledge from individual case studies when researchers accumulated case knowledge and compare and contrast cases. In doing so, these processes produced new knowledge. However, Stake (2005) in Denzin and Lincoln (2008), advocated finding the differences between cases rather than the similarities and also emphasising each case's uniqueness. In this research, the researcher focused on finding both the similarities and differences.

Trustworthiness

One of the most challenging questions in qualitative research is the quality, validity, and trustworthiness of the research (Sandelowski & Barroso, 2007) as this was a very complex issue (Hesse-Biber & Leavy, 2011). In quantitative research, validity depended on measurement while, as discussed earlier, qualitative research is not able to be tangibly measured to produce a numerical result. Thus, validity and reliability became the major debate in qualitative research, which, if not rigorously pursued, can lead to unreliable results, as often criticised by positivist researchers (Liamputtong, 2009). Qualitative research viewed reality as socially constructed by individuals and this construction could be measured. However, rejecting validity and reliability means rejecting the scientific value of qualitative research (Morse, Barrett, Mayan, Olson, & Spiers, 2002; Tobin & Begley, 2004). Lemnek (1998) argued that qualitative studies achieve higher validity as the data are closer to the research, opinions, and views of the research subjects. As a result, the data are closer to reality and a successive expansion of data is possible. Therefore, the researcher was confident of the validity and reliability of the results.

Validity

Another way to ensure the validity of qualitative research is triangulation (the use of multiple methods of data collection or sources of data) (Berg, 2009; Creswell, 2008; Hesse-Biber & Leavy, 2011; King & Harrock, 2010). The different types of triangulation suggested by Hesse-Biber and Leavy (2011) are: methodological triangulation (using different methods such as a mixture of quantitative and qualitative methods); theory triangulation (using different theoretical models to make sense of the same set of data); investigator triangulation (comparing the data collected by different researchers); and data triangulation (using variety of data sources within a single study such as interviewing children, parents, youth workers and police officers in a study about children's responses to street crime). The researcher used data triangulation by selecting data from different sources such as from Directors or Director Assistants, Heads of Department, lecturers who are active in units, and lecturers who are not in management or active in units. This research also employed methods triangulation since the researcher combined interviews with document analysis (Silverman, 2010). Holloway (2008) calls this a within-method of triangulation as the different strategies (interview and document) are still in a single paradigm (qualitative).

King and Harrock (2010) discussed the internal validity (credibility) of research which, according to Carpenter and Suto (2008), refers to the authenticity (genuineness, reliability) of the research. Carpenter and Suto went on to say that purposive sampling and carefully selected participants give the research credibility. As mentioned earlier, this research applied purposive sampling in order to recruit participants. The participants were also those who were qualified to describe or explain their experience related to knowledge sharing in their organisations (either among staff members or between management and staff). As Schwandt (2001) argued, internal validity is about the 'fit' of what the participants say and the representation of research findings by researchers. Therefore, the researcher transcribed all of the interviews word for word as recommended by Roberts, Priest and Traynor (2006) to assure the reliability of the research.

The researcher also carried out member-checking to verify the data gained from the participants as suggested by Creswell (2012), Marshall and Rossman (2011) and Flick (2009). After transcribing the interviews, the researcher sent the interview transcript to the participants and asked them to edit, clarify, elaborate, and, at times, delete their own words from the narratives (Carlson, 2010).

Another way to ensure validity in this research was through peer review, as suggested by Creswell (2012) and Marshall and Rossman (2011) who recommended keeping an audit trail (a record of the data). These strategies were used in order to ensure this research was valid and reliable. Meanwhile, external validity was approached through the use of multiple case studies (Merriam, 2009), as, according to Freebody (2003), a multiple-case study is replicable.

Another way to assure the validity of this research was through the trustworthiness of the research. King and Harrock (2010) and (Carpenter & Suto (2008) developed criteria as the alternative quality criteria for qualitative methods to measure the rigour or trustworthiness of qualitative research. They were: credibility (internal validity), transferability (external validity), dependability (reliability), and conformability (objectivity). Credibility was the 'fit' between what the participants said and the representation of research findings by researchers (Schwandt, 2001). Suter (2006) said that the most important criterion for judging a qualitative study was its credibility or trustworthiness. It is concerned with the explanation which fits in the description (Tobin & Begley, 2004). Credibility could also be achieved when the information gathered from the participants was represented as accurately and adequately as possible (Liamputtong, 2009). The researcher applied verbatim transcription so that the transcription matched what the participants said.

Credibility of research might also refer to the authenticity (genuine, reliable) of the research and the purposive sampling, and carefully selected participants gave the research credibility (Carpenter & Suto, 2008). To meet this criterion, the researcher used purposive sampling using the snowball technique in order to recruit the right participants. The participants are also those who are qualified in their workplace.

Transferability is a word meaning the generalisability of inquiry (Tobin & Bregley, 2004). However, according to Hesse-Biber & Leavy (2005), qualitative methods did not need generalisation of the findings. Qualitative research measures the degree to which the findings are able to be generalised or applied to other individuals or groups / contexts or settings (Carpenter & Suto, 2008). This research might be applicable for other State Polytechnics in Indonesia and also for other higher educational institutions in Indonesia. As previously stated the organisational culture and leadership in organisations in Indonesia are influenced by Indonesian national culture. This means that even though the sub-cultures are different, other organisations which were not included in this research, but are still geographically in Indonesia, might have similar characteristics to the research sites in this research. Therefore, it could be possible to replicate the procedure or process in this research and use the theories developed from this research as a reference.

Dependability refers to the fitting of research findings and the data (Carpenter & Suto, 2008). Dependability could be achieved through the audition process and researchers must assure that the process of research is logical, traceable, and clearly documented (Tobin & Begley, 2004). In order to assure dependability, researchers document in detail the choices of methodology and methods of data collection and link the data and research findings coherently (Carpenter & Suto, 2008). In order to meet this dependability criterion, the researcher explained the rationale of the research method. The researcher provided references that support the argument.

Finally, confirmability. This refers to the objectivity or neutrality that ensures that the research findings and their interpretations are not from the researchers' imagination but from the data (Tobin & Begley, 2004). Confirmability might also reduce bias (Liamputtong, 2009). Verbatim techniques used in transcribing the data made this research objective as any information could be traced and data analysis was based on word by word transcription.

Reliability

The researcher was also aware of the reliability of this research. According to Kvale (2007), reliability refers to the consistency and trustworthiness of the research

findings. Reliability also refers to the extent to which consistent methods and procedures are used. Babbie (2008, p. 140) remarks: 'It is a matter of whether a particular technique, applied repeatedly to the same object, yields the same result each time'.

The researcher tried to be reliable during the process of data collection. Roberts et al. (2006) further explained that a researcher should keep detailed notes throughout the process. As reliability was about consistency, the researcher fulfilled the requirement by asking identical questions, ensured that participants who were interviewed had an appropriate level of experience within the organisations, and made certain that each participant received an identical briefing, background and information about the research before the interview questions were asked. Therefore, the bias was minimised. Reliability and validity were assured by consistency and treating the research sites equally (Golafshani, 2003). Roberts et al. (2006) recommended that the researcher documents the procedures conducted to ensure all participants followed similar procedures and are asked the same questions. In addition, they noted that the researcher should keep the notes taken during the research process.

Ethical Considerations

Ethics approval was obtained from the Social Behavioural Research Ethics Committee of Flinders University (Ethics Approval No. 6141) before the fieldwork commenced. After approval, the researcher asked permission to conduct the research fieldwork from the Director of each Polytechnic involved in the research project. Participants from each State Polytechnic were informed of the ethical issues, and of procedures to be undertaken during the data collection. Consent forms were sent in order to respect and protect the participants (Babbie, 2008). The aims, research objectives and research questions were also outlined so that the participants understood the nature of the research. Finally, participants were informed that confidentiality and anonymity would be maintained at all time. Consent forms that included all of this information were distributed and participants signed the form.

Chapter Summary

This chapter presents the rationale for selecting the methodology which includes the use of multiply case study, the research design, as well as the procedure in selecting the participants and research sites. The participants in this study are lecturers who are top managers, middle managers, active as members of units, or just lecturing from three research sites in three different provinces in Indonesia. Each research site has similarities and differences in cultures. This study deploys semi-structured interview to collect data. To analyse the data, the researcher used content analysis. The data collected from the interviews were analysed using within-case and cross case analysis procedures. This explanation is followed by the presentation of how this study maintains its validity and reliability.

The following chapter presents the findings in this study. The data was collected from three participant groups in Research Site 1. The presentation covers within-case analysis of the findings on what knowledge is shared, the approach used, the types of knowledge, and how knowledge is created. The second part is the presentation of within-case analysis of research findings on the participants' motivations to share knowledge.

CHAPTER FIVE : HOW DOES KNOWLEDGE SHARING OCCUR AT RESEARCH SITE 1?

Chapter 5 presents the knowledge shared at Research Site 1 in the province between Java Island and East Nusa Tenggara. Previous chapter discussed the cultural context of each research site in order to understand the influence of culture in knowledge sharing. This chapter presents the data in relation to *How Knowledge Sharing takes place* at RS1. The presentation includes: RQ1, What knowledge is shared at RS1? and RQ2, What motivates the participants to share knowledge? This chapter is divided into four major sections: Section 5.1 knowledge shared by Top Managers, Middle Managers and Lecturers who are active in a Unit (Lecturer-Unit), and Lecturers who do not hold any structural position and are not active in a unit; Section 5.2 within case analysis for RQ1; Section 5.3 what motivates the participants to share knowledge; and Section 5.4 within case analysis for RQ2.

The Top Managers in this data presentation are the Director and the First Director's Assistant who are also lecturers at RS1. The Middle Managers are the lecturers who are also the heads of the five technical departments. Lecturer-Unit are lecturers who are also members in a unit and are Lecturer-Unit 1 and Lecturer-Unit 2. A unit in a State Polytechnic in Indonesia is a section or subdivision in the organisation which provides certain service for the members in the institution and community outside the institution. Finally, Lecturer-Teaching are lecturers who do not hold any structural position either at the top or middle-management level and who are not the members of a unit in the research site.

Section 5.1 is organised into four subsections which describe what knowledge is shared by each group of participants. Each part of section 5.1 also illustrates the findings on the approaches used by the participants at RS1 during the process of sharing knowledge which can be through a formal or informal approaches. The influence of organisational factors is also described. Section 5.2 is the within case analysis which explores the similarities and differences of knowledge shared by each group of participants. This section also describes the similarities and differences between types of knowledge shared, how the knowledge is created, and the approach used by each group of participants at RS1.

Section 5.3 explores what participants' motivations are to share knowledge and what organisational factors influence the motivations. The last subsection,

section 5.4, is within case analysis which presents the data related to RQ 2: the motivation of the participants to share their knowledge which explores the similarities and differences between Top Managers, Middle Managers, Lecturers-Unit, and Lecturer-Teaching participants' motivations to share knowledge.

5.1. What knowledge is shared at RS1

The presentation of the findings begins with the knowledge shared by Top Managers. Top Managers are the Director and the First Director's Assistant .

5.1.1. Knowledge Shared by Top Managers

This Subsection presents what knowledge is shared by Top Managers at RS1. The knowledge shared by Top Managers at RS1 are in the areas of: *Tridharma*, Professional Development Programs (PDPs), and Management. In the area of *Tridharma*, Top Managers also shared knowledge related to teaching material, research methods, and dedication to community or Community Service. With regard to PDPs, Top Managers shared knowledge related to PDPs reports, key points, and information related to scholarships. Furthermore, in the area of Knowledge Management, the Director shared knowledge related to organisational strategies and development while the First Director's Assistant shared knowledge related to institutional life and direction. The First Director's Assistant also explained that he shared knowledge in the areas of knowledge policies and regulation and summaries of informal meetings.

The knowledge shared by Top Managers at RS1 is demonstrated in Table 5.1. which is arranged to allow comparison of the two participants at this level.

Table 5.1

Areas of Knowledge Shared by Top Managers at Research Site 1

Director		First Director Assistant	
Area of knowledge shared	What knowledge shared	Area of knowledge shared	What knowledge shared
<i>Tridarma</i> (three dedications)	Teaching material	<i>Tridarma</i>	Teaching material

	Research methods [document analysis]		Research methods [document analysis]
	Dedication to Community		Dedication to Community
PDP (Professional Development Program)	PDP report	PDP (Professional Development Program)	PDP report
	PDP key points		Information about scholarships
Management	Organisation strategies and development	Management	Institutional life and direction
Policies from DIKTI		Circulate/socialise Policies and regulations	
		Summary of informal meetings	
		Current affairs	

The Director mentioned that producing teaching material is an obligation for lecturers. The First Director's Assistant added that the sharing of teaching material was conducted within KBK (*Kelompok Bidang Keahlian* /expertise group) which is groups of lecturers who have similar expertise or who are teaching similar subjects in each department. For example, in the Civil Engineering Department, lecturers with hydraulic expertise will be in the same group. The First Director Assistant mentioned, "we have KBK, where lecturers can share their expertise....they share knowledge related to teaching material in this group..."

Research methods were shared in Academic Forums at RS1 which provides opportunity for each department where they can share knowledge about research. Sharing knowledge in this forum was important to develop the department's research and to get approval for conducting research at the institutional level. Research proposals must be approved by an academic forum at their departmental level. The Director reported,

Forum is scientific forum here in department level. There, we share the knowledge. That's what we do there. For example, there is a friend who has just attended training, especially when it will be followed up by conducting research on campus, before it is approved by the institution, by the centre, it has to follow the forum mechanism in department...all lecturers must conduct research every year...the institution provides academic forums in each department so that the sharing of knowledge related to research takes place...lecturers who do not conduct research, will not receive their

certification... research project must be approved at academic forum before it gets the institution's approval...

Both Top Managers shared their experience with the community. They shared how they do things in their workplace with the community where they live. They also shared their experience in their workplace and provided opportunities for the community to share experiences as well. Besides sharing traditions in the workplace, sharing culture (how they carry out tasks in the workplace) such as traditions in their community is actually sharing knowledge. Top Managers felt they are obligated to share culture (knowledge) to keep nature in balance. The Director at RS1 recounted, "I am tied by my social community, all of us here...in my community, we share knowledge related to social-culture. Such as our habit at our workplace, basically sharing culture..."

Professional Development Programs are one of the obligations for lecturers in HEIs in Indonesia as they are obligated to advance themselves. The sharing of knowledge of PDPs by Top Managers at RS1 occurred by submitting PDP reports to the institutions especially when the programs attended were work place-funded. The Director explained,

it is an obligation for all members to submit a report after attending a PDP...it is their responsibility ... especially when it is workplace-funded PDP... But those who attend the staff development program privately do not need to make reports. But if they attend the meeting as it is asked by campus, they are obligated to make reports.

Both Top Managers at RS1 shared PDP key points from the programs they had attended. The sharing could be in a formal forum such as in an academic forum in each department. The academic forum itself is formal and each department has one. The academic forum meeting is usually held biannually and the topics discussed are mainly concerned with research. In the meeting they share their research proposals, new ideas for research, or new regulations related to conducting research in HEIs. Nevertheless, sometimes they also share the key points of PDPs they had attended. The First Director's Assistants share information related to scholarships and training.

Top Managers shared information related to management and policies and the regulation area of knowledge which could entail organisational strategies, direction, and institutional life. If the Director shared knowledge by discussing the policies from the government (DIKTI), the First Director Assistant also shared policies and regulations with other members in the institution. He also discussed

new policies with the Director and recounted, “with my supervisor, we discuss policies, regulations, President Regulations....”,

Formal and Informal Approaches

The approaches employed during knowledge sharing can be formal or informal, or may be a combination of both. The data in this research indicated that formal meetings were usually followed by informal ones such as sharing documents or having further discussions. For example, for important topics which were discussed informally, the First Director’s Assistant would also organise a summary so that it would be followed by a formal discussion of the topic. The First Director’s Assistant said, “I think, formal and informal discussions complete each other. Their function is complete each other. The informal group discussion completes the formal one.”

A formal approach in this discussion refers to any meeting which is set or has been planned earlier, both in time and place. The time is usually during working hours and the venue, within the office area. Notice of formal meetings is normally through an invitation and may be a regular or an incidental meeting. Formal meetings can be held face-to-face or by submitting a report as part of the regulation requirements. An informal approach is any meeting which is planned informally (no need or invitation) or not planned at all and is just an agreement between parties. The meeting place can be anywhere, even outside the office and at any time during office hours. Informal meetings can occur through email, phone, Short Message Service (SMS), or Blackberry Messenger or BBM (an application provided by Blackberry for sending message). The First Director Assistant recalled that, “Sometimes through email, face-to-face, or phone... We share a lot of information through mailing list such as the information about training, scholarship. But, besides sharing through mailing list, we also share through BBM group”.

The choice of approach depended on what knowledge was shared, who the recipients were, where the knowledge was shared, and the effectiveness of the approach for sharing. When the knowledge shared was related to *Tridharma* or Professional Development Programs especially submitting the PDP reports, Top Managers usually employed a formal mechanism. For sharing teaching materials, departments set certain meeting times to accommodate the lecturers to share materials in order to design new material in each department. Teaching material or resource exchange might happen informally as well as after a formal meeting. For sharing knowledge related to research, each department had an academic forum

which had a meeting agenda and a schedule of annual or biannual meetings. Ideas or feedback on research were shared during these meetings. During formal discussions in Academic Forums, Top Managers also shared PowerPoint presentations or articles. However, knowledge sharing on research methods such as research methodologies was also conducted informally. Top Management often received subordinates in the office as they needed to ask information regarding research in an informal situation.

For Dedication to Community, the Director shared knowledge in hydraulics with other members in an Indonesia Hydraulic Engineering Association formal meeting, usually held outside the province. The Director also became a consultant for flood control in the community. Meanwhile, the First Director Assistant shared his habit at the workplace with subordinates informally in *Banjar*.

Regulations govern the reporting of PDP results, therefore, Top Managers must submit a hard copy of a report after they attended Professional Development Programs or training. However, the sharing of ideas, experiences or information on PDPs was mostly conducted in an informal meeting. Formal sharing occurred when someone had finished a doctorate [one of the activities of Professional Development Programs]. They would be asked to share their thesis during the anniversary celebration of the institution. The Director explained, "For example, those who have just finished their doctoral degree, they present in *Dies Natalis* (campus anniversary), they might get the certificate of participation..."

Top Managers used the informal approach when they discussed policies and regulations. After that, the Director would inform the First Director's Assistant about the new regulations and the First Director's Assistant would then circulate the policies or regulations to other subordinates such as lecturers. Meanwhile, *Pakraman* [a scheduled gathering every year at RS1] was used for sharing knowledge related to management such as organisational strategies and development and also the institutional culture.

Pakraman is influenced by culture. It comes from *Pakraman Village*, a traditional village which maintains the traditions and laws of the culture of the province where RS1 is. A *Pakraman Village* has similar traditions, norms and social regulations to traditional law. Even though the Director assumed *Pakraman* to be an informal approach as he refers to the atmosphere during the discussion being relaxed and informal, *Pakraman* is actually a formal approach in this study, as it is scheduled and held within the organisation.

A formal mechanism was selected when the sharing involved parties from other areas or from outside the institution. The Director, who was the member of the Indonesian Industrial Association, often had meetings within the association in other provinces. The sharing was conducted formally as they had an annual meeting. A national event such as a National Seminar was also a place where the participants, including Top Management shared knowledge formally. The Director recalled,

As the vice president of Indonesia Industrial Association, most of the activities there are related to the utilisation of water as a source. The activities can be congress or annual scientific meeting for the experts, related to my background knowledge. Therefore, I go all around Indonesia.

Meanwhile, the First Director's Assistant recounted, "We bring the topic to a seminar for example...they have different function. For example, it has been twice we carried out national seminars..."

The approach was selected by considering its effectiveness in facilitating the sharing and also its efficiency in the function of informal discussion as an approach which complemented a formal approach. The Director added: "What we do, we use the face-to-face interaction first. Then, we follow up the discussion using IT." According to Top Management the informal approach was more effective than the formal approach. The reason underlining this opinion was member participation (audience/recipients) which was influenced by local culture. Even though, according to the Director, formal meetings were effective as information could be transferred to many members in the organisation at the same time, he also admitted that formal meetings might not be effective for sharing knowledge because during formal discussion many participants were less active. He agreed that an informal approach was more enjoyable. He said,

I think it is the same. Both formal and informal group discussions are effective. Even though, in formal meeting, it is more solemn. Some participants are a bit worried to express their opinion. Afraid of making mistake. Some may feel a bit superior for having more knowledge...but it is effective when sharing the knowledge. I am sure. In informal group, no pressure to sharing. It is just flowing. More open in informal group...there is no senior or junior feeling. Maybe because it is not formal. So no such senior or junior feeling... The feeling may be different. But I have to admit it is more enjoyable in informal discussion.

Meanwhile the First Director's Assistant countered that an informal approach was more effective as it encouraged participants to talk and many ideas actually came from an informal discussion. He also stated that the informal approach was important to complete the formal one. The First Director Assistant said that,

more active the informal one. We are open here. So if others for example enter my office, they are not hesitant at all. Then the sharing happens. I think the informal one is more effective than the formal one...ideas mostly come from informal discussion...maybe because we are [culture in this province where the RS1 is]. So this is [culture in this province where the RS1 is] character. This is [the province where RS1 is] culture. The formal one usually inflexible, rigid. We might lose the ideas.

It could be seen that local culture influenced the effectiveness of the informal approach. Even though the embers of RS1 might need to conduct a formal one, the approach may not facilitate the sharing optimally.

Influenced by their local culture, Top Managers at RS1 agreed that face-to-face interaction was more effective than non-face-to-face interaction to convey the meaning of the information or share the knowledge as it would be more appreciated by recipients. The knowledge shared would be understood, would receive faster feedback from recipients, and face-to-face interaction would build intimacy. Besides, they often met face-to-face in the office and sharing took place. The Director recounted,

Face-to-face is more effective because of culture...If we communicate face-to-face, the feeling of attachment arises. So we build intimacy and closeness in this organisation. It is not enough if we use technology...when we sit together and share, there will be no misunderstanding, give feedback to each other faster... We can do the interaction faster...we can immediately discuss the issues in the discussion. But if we share through IT, we might get the response in the afternoon...from time effectiveness for feedback, face-to-face is more effective.

The First Director's Assistant said that,

I think the informal one is more effective. If we meet face-to-face, our colleagues feel more appreciated, it will be easier to share the knowledge and the implementation...we meet face-to-face more often. Well, our teaching schedule is quite full that is why we more often to see each other, then the discussion takes place...Well, let me tell you a story. In [the province where RS1 is], if we invite someone through phone, the response will be not much. We must meet face-to-face, to everybody. Not because structurally higher than us. It will be more appreciated. Can you imagine through email? ...Well, most of the staff here have email, however, not all of them active checking their email regularly.

However, both Top Managers at RS1 agreed that non-face-to-face interaction such as through email or BBM was still needed to circulate documents. Moreover, sharing knowledge through IT would facilitate senders distributing the information to more people, anytime, and anywhere. The Director stated that,

IT is very important for sharing knowledge. As you know, not all of us come to campus at the same time or day...Sometimes I am in my campus one of my friend is not. When they are in campus, maybe I am away. Therefore, we use IT quite often...

The First Director's Assistant added,

Through BBM group, the information circulates faster. Sometimes, before we send the invitation of workshop or discussion, we share it through BBM first... We send document through email sometimes. Usually letters, policies, the academic materials, so most of them is actually the information. Informally sometimes. Not detailed content. Maybe just 50%. We try to make email interaction as part of the culture though.

Summary

Top Managers at Research Site 1 shared knowledge in the areas of *Tridharma*, Professional Development Programs, management, policies and regulations, summaries of informal meetings, and current affairs.

The types of knowledge they shared around these areas could be tacit and explicit, either individual or collective knowledge. As a result, the knowledge in this institution was created through Socialisation, Externalisation, Combination, and Internalisation. Socialisation is the most popular way of creating knowledge at RS1.

During the process of knowledge creation or the sharing of knowledge, Top Managers at RS1 applied both formal and informal approaches. It depended on what knowledge was shared, who the recipients were, where the knowledge was shared, and the effectiveness of the approach.

5.1.2. Knowledge Shared by Middle Managers

This subdivision presents the findings on what knowledge is shared by Middle Managers at RS1. There are five Middle Management participants in this Research Site: Middle Manager 1 (MM1) through to Middle Manager 5 (MM5). The presentation of the findings is followed by the types of knowledge shared, how knowledge was created, and the approach used when knowledge was shared.

In response to the first research question, Middle Managers at Research Site 1 reported that they shared the areas of knowledge such as *Tridharma*, Professional Development Programs and their reports, material, information, and key points, expertise, articles or information, administrative issues such as calendars, vision, staff administration information, meeting minutes, and information from government/DIKTI), management (such as information on department's development, management, how to manage the department), feedback after formal meetings, and current affairs.

Table 5.2 summarises the areas of knowledge shared according to the five middle management participants. Column 2 lists the areas of knowledge shared. Column 3 presents the kinds of knowledge shared and columns 4, 5, 6, 7, and 8

indicate what knowledge each middle management level participants reported they shared.

Table 5.2

Knowledge Shared by Middle Management Participants at RS1

No.	Area of knowledge shared	What knowledge shared	MM1	MM2	MM3	MM4	MM5
1.	<i>Tridarma</i>	Teaching material		√	√	√	√
		Research methods, proposal, ideas, references (related to Conducting research)		√ [document analysis]	√	√	√ [document analysis]
		Knowledge, experience, machine construction or design to community (related to Dedication to community)		√			√
2.	Professional Development Program	Reports	√		√		√
		Material		√			
		Information	√			√	√
		Results	√				
3.	Expertise, design	Knowledge of expertise, a design	√	√ [document analysis]	√		
4.	Pass on/forward information or articles from a colleagues	Information, articles, academic papers	√ [document analysis]	√			
5.	Information on administrative issues	Calendar/timetable	√ [document analysis]			√	
		Vision	√				
		Staff administrative information				√	
		Meeting minutes	√ [document analysis]				
		Information from DIKTI (government)			√		
6.	Management	Information on department development	√				
		Management		√	√		√
		How to manage a department				√	
7.	Feedback after a formal meeting			√			
8.	Social issues				√		

Most Middle Management participants at RS1 shared knowledge in the areas of *Tridharma* and Professional Development Programs, expertise, and management. They shared knowledge related to teaching materials, with other lecturers who have similar expertise in their department or who teach similar subjects. They shared their modules and references, discussed the content of the materials and then designed new teaching modules or material, together. Knowledge related to research was shared in Academic Forums in each department where they were the chairs of the forums. For dedication to community, Middle Manager 2 designed a machine which could be used by the community and Middle Manager 5 shared his expertise with staff at the electricity department.

Middle Management reported that the sharing of knowledge related to *Tridharma* was influenced by their job as lecturers. MM2 recalled,

[We] also have an academic forum here where we share knowledge on applied science for example... If my colleagues need data for their research, I share the data to them. ...related to commitment to community, I share about machine construction for example. Informally and formally. That is my dedication to community...

MM3 added, "no special meeting for the sharing. We have special formal meeting ... we usually share our idea for research, or research proposal". MM5 noted, "so most of our sharing is related to our job..." MM3 shared teaching material in the KBK group. KBK is an expertise group in each department at RS1 in which members may also teach similar subjects in each department. There are also subgroups in the KBK. For example, in the Tourism Department, there was a tourism KBK, a hotel KBK, and a ticketing KBK. It depends on the subject area taught in classrooms. MM3 said, "I usually share teaching material and modules in KBK group. This is the expertise group we have to share information here ...". Meanwhile, MM5 recounted, "I was a reviewer for other colleagues' research. So I gave feedback about their research." Finally, MM3 explained that they must set the discussion at Academic Forums to discuss their research before the submission date which was usually in February. He mentioned, "Normally about February. So it is the time before we submit our research proposals to P3M (the unit at Institution level which approves research proposals). We discuss how to improve our proposal"

All Middle Managers at RS1 shared knowledge related to Professional Development Programs they had attended and their expertise. The sharing could be in the form of documents or files such as reports, materials, or forwarding the information regarding PDPs. They also shared the PDP results or key points to their

colleagues through discussion. After attending PDPs, as with other members at the RS1, Middle Managers must submit a report which summarised their activities during the programs to the institution's director. MM3 added, "I think the submission of reports are the sharing of report to finance department. Well, basically for the institution..." MM2 explained that their structural position also requires them to share PDP key points with subordinates. MM2 said,

As a head of department, every year we have human resource training. Then in the meeting, the trainings that had been attended are announced. The training results are discussed in those meeting...because, when we attend training, sometimes it is obvious that the material is for us to use in teaching students.

Meanwhile, MM4 indicated that their position as Heads of Department suggested that they share PDP information. MM4 added, "as a head of department, I also share information related to administrative training, filing training and so on..."

In terms of sharing knowledge in the areas of expertise, Middle Managers had different expertise which they shared mostly with colleagues in their own department offices as they expected that colleagues would understand the topic discussed. They also shared knowledge with their colleagues outside of the department or with Top Management, especially knowledge about management. The sharing of expertise was influenced by specialisation and culture. Expertise was shared with colleagues who had similar knowledge. They also shared knowledge with other subordinates who consulted them regarding their expertise. MM2 said, "We do not really share things outside those topics, mostly about our expertise...About mechanical engineering for example. They sometimes say, here sir, this is a new thing, what do you think?" Similar to MM2, MM3 also recalled, "For example, there is a new foundation method. So with a friend who also has similar expertise, I share the information." They might share articles, journals, or discuss a new development or invention in their field. They also shared products such as machines for other colleagues as MM2 had done.

MM1, MM2, and MM4 also passed on the information from colleagues. Having positions as Middle Management personnel, they dealt with management in their departments and therefore, the knowledge shared was also about management. This included information on departmental development, management in general, or about how to manage a department. MM4 assumed they were mandated to pass on information to other colleagues and recalled, "when she (a friend) has an article or other information, she sends the paper immediately

through email, and asks it to be passed on to other colleagues... a friend in France also shares. So I re-share the information."

As the heads of the departments' administrative staff, Middle Managers at RS1 shared knowledge about administrative issues such as sharing files, discussing the timetable, calendars, the organisation's vision, meeting minutes, staff information, and also circulated information from The Indonesian Directorate General of Higher Education. This sharing was influenced by their structural positions in Middle Management who receive information from their supervisors, then share it with subordinates. MM4 recalled, "as a head of department... I shared the information about SKP (employees work target) ... I shared information about PKD (*Pengembangan Karir Dosen/ Lecturers Career Development*) from DIKTI... I share the teaching timetable, and information about workshops outside the campus."

Most of the Middle Management team shared knowledge related to management. MM2 stated, "the topics discussed with management are normally about campus. About management, condition, facilities, infrastructure, about my department...the topic can be about budget". MM3 commented,

I share knowledge in management and administrative stuff. But it is usually during evaluation in department meetings. Formally...about how I manage the department."

MM4 added, "Just as heads of departments. So we discuss about, the topic mainly about organisation, about how to lead a department..."

Another form of sharing was feedback after a formal meeting and sharing of other general topics. After formal meetings, MM2 gave feedback to the speakers or presenters outside the meeting to protect the person's feelings out of respect and 'saving face'. MM2 stated, "I think it is the culture. We are from the east, always trying to protect one's feeling. We prefer to deliver the idea to him outside the meeting." It is not only work-related knowledge that they shared, Middle Managers also shared current affairs which were influenced by their culture, as well as habits or best-practices. MM3 recalled,

The topic can be anything actually. Besides, it is part of the culture. It is just a habit. ...in [the province where RS1 is], we are open. We share what we have, what we know... Just one who knew first. Then he shares...

Formal and Informal Approaches

The findings above demonstrate that knowledge sharing by Middle Management at RS1 could be formal or informal. This may be because a formal discussion is often followed by an informal one in order to make a formal meeting more effective. However, sometimes an informal approach is followed by a formal one so that the knowledge was shared to all members. MM1 explained that,

Well, sometimes is like this. What we share in IT, sometimes, there are certain points, well... need to be discussed further with friends. So we set the meeting where in that meeting, we explain further to have better understanding... we get the information from our friends. But we cannot really pass it to all of friends. We need to have a formal meeting so that all members are gathered (and informed). After that it will be followed by informal one... It makes the meeting effective

The approaches were chosen depending on what knowledge was shared, why the knowledge needed to be shared, with whom the knowledge was shared, and the effectiveness of the approach of sharing. Knowledge which was related to their obligation as lecturers such as *Tridharma* or Professional Development Programs, was shared by Middle Managers at RS1 using the formal approach. The formal approach was applied when they discussed knowledge related to management. When they shared teaching material, they used the KBK forums to discuss it. They also exchanged teaching modules informally. Middle Management shared knowledge related to teaching material in the classroom during the teaching-learning process. Middle Managers shared knowledge related to research formally in Academic Forums conducted by their departments or by reviewing other lecturers' research proposals. They also shared their research which had been published in Journals or by placing research articles on the department's information table.

To fulfil their obligations, Middle Management established projects for the community. Usually the discussion about the community projects happened formally or informally. During the project work, MM2 also used informal discussions with his colleagues. Meanwhile, MM5 conducted formal fieldwork to share his experience. During the field work, informal discussions with the community took place.

Middle Management were obliged to share PDP reports formally with their institution. Informally, they share their PDP results, material, and information. The information about PDPs was shared through Facebook or by placing brochures on the department's information table. Formally, PDP material was shared during the

teaching-learning process. MM2 reported, "I share the knowledge I get from training or workshops with my students..."

Middle Managers also shared knowledge related to management formally in formal meetings at institution or department level, when they shared knowledge concerning their departments' condition, facilities, or information about management. The discussions about management also took place during evaluation meetings. Yet, the discussions related to their responsibility as Middle Managers could also be conducted informally, with other Middle Management colleagues.

Middle Management participants often passed on the information to other members in the departments during formal meetings. The informal approach was also deployed through email.

Meanwhile, knowledge regarding administrative issues was mostly shared informally such as by placing their vision on the lecturers' room's wall, through the department's website, or by forwarding the information through email or hardcopy. Facebook was one form of media used to share with administrative staff.

The expertise of Middle Management participants at RS1 was mainly shared informally with colleagues in their department. Feedback after a formal meeting and social issues were shared informally as well. Soft files were shared which was usually followed by an informal discussion. Informal discussions might also take place with colleagues from other departments.

The approach chosen might depend on the urgency of the knowledge to be shared, or the recipients with whom it was shared. MM3 noted, "if I have something urgent, need to be shared immediately, I just do it. But if it is for the next year plan for example, I just wait until the meeting time" Meanwhile, if the recipients included the Top Management, the sharing took place in a formal meeting. MM2 stated, "our communication with Top Management is decent. Not rigid. But in formal forums, sometimes, well...as I said earlier, not..." MM5 confirmed: "if it is related to work, Top Management sometimes get involved in the formal discussion..." However, informal discussions were also chosen if the discussion related to reporting the condition of the department they led.

The effectiveness of the approach to deliver the knowledge and its function were correspondingly the points that determined the approach used. A formal approach was effective when a great deal of knowledge was to be received. MM3 commented, "All this time I get more knowledge from formal discussion..." MM4 added, "formal meeting is more effective for knowledge sharing such as (in) an academic forum..." However, influenced by culture and opportunities to share, an

informal approach was assumed to be more effective than the formal one. The atmosphere in the informal discussion made it open to share, as it was relaxed. They would also be able to “save one’s face” in the informal one. MM2 mentioned,

Maybe, because it is our typical character. When we deliver an idea, we choose the informal way. It is more open. If you are wrong, that will be okay. Or if you say one’s idea is wrong. It will be okay too. If in formal discussion, we feel a bit reluctant to say something against what our colleagues say. We do not hurt our colleagues’ feeling in public. It often happens...I think it is the culture. We are from the East, always try to protect one’s feeling. We prefer to deliver the idea to him outside the meeting...so even though we are in the academic world, free to talk, but we still have to be careful in communication. We are free to express our idea, but if it is related to other people feeling, we choose to discuss it later. But in informal discussion with them, it runs very well. The discussion is free mam...

MM3 agreed and said, “the formal meeting is not tense either, but...still not as free as in informal meeting the way we discuss things. It is just my personal feeling...” Moreover, MM5 confirmed the atmosphere during informal meetings. He recalled, “...I think the informal one is more effective...because [there is] more time for discussion and it is in a relaxed situation...” MM1 claimed that an informal approach often completes the formal one.

The RS1 Middle Management participants viewed an informal approach accommodated the need to share knowledge urgently, and immediately. They did not need to arrange a meeting time. Even though they did not have much opportunity to share with other colleagues outside their department, they could share more with their department colleagues as they had more opportunity to meet. MM3 recalled, “...with colleagues from other departments, we share sometimes. But the intensity is low.... but with colleagues, in informal meeting I can share more. Because we can meet anywhere... it is about the frequency of meeting...” MM4 recounted, “...we have informal meetings a lot too...” Informal meetings were also effective as they were used to sharing or receiving the needed knowledge. MM5 remarked, “...in informal ones, what we are looking for is what we discuss. So it is matched with our interest...”

The informal approach was carried out either through IT or face-to-face. The option was determined by what knowledge was shared, the speed, and the cultural correctness. According to MM3, the use of media to share knowledge or through face-to-face interaction depended on what form the knowledge was to be shared. He explained, “whether we use IT or face-to-face interaction, each has its own advantages. Depends on what we share. If I want to share, just for colleagues to read and know, I choose to use IT, sharing through IT...” MM4 also described

similar functions of IT as a media to share data or documents. She said, "It depends. If it is related to SKS (credit points for a subject) through email. Academic calendar, through email...I used IT more to share knowledge or document..."

However, when the knowledge required was to be explained or discussed further, face-to-face interaction was the option as MM3 informed, "if the information needs to be discussed or explained, I choose face-to-face interaction to share. If we use IT, it will not be effective as we just reply each other all at the same time..." MM1 also argued that face-to-face interaction was a better way to have a greater understanding of the knowledge, "well, sometimes is like this. What we share in IT, sometimes, there are certain points, well...need to be discussed further with colleagues...or better understanding, better meeting..." MM3 noted the importance of body language during sharing knowledge. He reported,

But with direct interaction, we can interact face-to-face, everything will go into our senses. We can understand body language. We know when people understand or not...they understand the topic better through face-to-face interaction. They receive the information faster and they can immediately ask me...

The ability of face-to-face interaction to convey knowledge made it an effective way to share knowledge, even though they still needed to use IT as was explained by MM2, "...though IT is effective too. Depends on the need...direct interaction is effective." MM5 supported this argument. He reported, "I think direct interaction is more effective...because when we do direct interaction, not all of our colleagues understand. Can you imagine when it is in writing form?"

Even though face-to-face interaction was more effective in conveying the understanding of knowledge shared, according to most of the participants, IT was useful in sharing knowledge faster. Moreover, they could share knowledge anytime and anywhere with many recipients. MM1 clarified:

...Sharing through internet. No procedure for that. Just our creativity so that the information will be circulated faster...well, so, IT is about the speed. To inform many members about a subject, faster via email...IT is really useful. Especially during holiday season like now. During holiday, not all of lecturers come to campus. If we have information for example, then we need IT. We publish the information through internet.

MM3 added,

IT has advantages if we are dealing with speed. We need it to be shared now...So, anytime, anywhere, and distance is not an issue...IT very important. It is faster through IT. If we try to share information to colleagues, it is faster. Besides, considering the distance, IT helps.

Similar to MM1 and MM3, MM4 explicated her opinion on the importance of using IT,

IT is very important. If we need to share new information, it will be quick through IT...with IT, it is about its speed, and because the data is also stored automatically...Sometimes on semester break or holidays like now, we cannot meet other members, so we use IT media. If something is urgent, from government for example, we use Facebook, email, or SMS to share information...IT is very important mam. For example, even with students. We manage the assignments through email. Or when they do their PKL (field-work), if they have to leave for their field-work place, a bit difficult to contact them. So we use email. Maybe about their final report or field-work report.

MM5 explained, "...When we do face-to-face interaction, we are dealing with time constraint and numbers. Cannot reach many receivers...with IT, we share to anybody. Even to people we do not know. For example, through blog."

Despite the speed, however, they agreed that it was not necessarily a rapid way to get feedback and face-to-face interaction was culturally more suitable. MM3 stated,

Using IT, may be, we are not in front of our computer at the moment. So maybe if we need to give quick response, a bit difficult. I am in campus now. Because I am busy, I do not have time to read email.

MM4 added,

I think IT and face-to-face interaction are the same. Through email, the problem is, we may not get the response immediately. When we use IT, we may not have time to read the email now...through email, a bit takes time to receive the response.

MM3 assumed that face-to-face was culturally suitable to share knowledge. He claimed, "well, it is culture. Face-to-face interaction naturally happens. We meet, then it happens. We respect that way."

Summary

Middle Managers at Research Site 1 shared knowledge in specific areas: *Tridharma* Professional Development Programs, expertise, articles or information, administrative issues management, feedback after formal meetings, and current affairs. Types of knowledge shared by Middle Managers were tacit and explicit knowledge either individual or collective.

Middle Management participants created knowledge in the organisation through Socialisation, Externalisation, Combination, and Internalisation. Most knowledge was created through Socialisation and the participants indicated that culture influenced this process.

The selection of the approach used to share the knowledge depended on what was shared, why the knowledge needed to be shared, with whom the knowledge was shared, and the effectiveness of the approach to share the knowledge. Meanwhile, the choice of methods whether face-to-face interaction or using IT, depended on what knowledge was shared, the speed, and the cultural correctness.

5.1.3. Knowledge Shared by Lecturer-Unit Participants

This section presents the findings on what knowledge was shared by the Lecturer-Unit group at RS1. The presentation is followed by what types of knowledge is shared, how the knowledge in the organisation was created by the Lecturer-Unit group and what approach is used when they share knowledge. The members of the Lecturer-Unit group in this presentation are Lecturer-Unit 1 and Lecturer-Unit.

The Lecturer-Unit group shared knowledge related to their duty as lecturers and members in a unit. They shared knowledge not only with colleagues in the institution, but also in the community. As part of the LSP (Professional Certification Unit), they have the opportunity to share knowledge related to their service to colleagues or students. The knowledge shared was not only in the areas of knowledge related to their job as lecturers, but also as part of a community. However, in her own words, Lecturer-teaching 1 realised that as a lecturer who did not hold any structural position, she did not share a large amount of knowledge. She explained,

I do not share a lot. Usually, colleagues such as the head of the departments or the Head of Study Programs are more active in sharing knowledge. Because they receive the information directly from the director. Then they share the information to subordinates, other lecturers. I am just a regular lecturer in a department, so I just receive what they share. The head of department of Head of Study Program I mean. Top down system I should say. Well, maybe the director receives the information from the Ministry.

The knowledge shared by the Lecturer-Unit was in the following areas : *Tridharma*, Professional Development Programs, and current affairs. They also shared knowledge in areas such as the Unit's service, teaching techniques, and expertise. In *Tridharma*, the Lecturer-Unit shared knowledge related to teaching material, research methods, and dedication to the community. In the PDPs area of knowledge, Lecturer-Unit shared knowledge related to PDP reports, materials, and key points. Table 5.3 presents findings of the knowledge shared by lecturers who are active in the unit .

Table 5.3

Knowledge shared by Lecturer-Unit Participants at RS1

Lecturer-Unit 1		Lecturer-Unit 2	
Areas of knowledge shared	What knowledge is shared	Areas of knowledge shared	What knowledge is shared
<i>Tridharma</i>	Teaching material	<i>Tridharma</i>	Teaching material
	Research methods		Research methods
	Dedication to the community		Dedication to community
PDPs	PDP reports	PDP	PDP reports
	PDP material		PDP material
Current affairs			PDP key points
Unit's service		Current affairs	
		Teaching techniques	
		Expertise	

The sharing of knowledge in *Tridharma* included the sharing of knowledge related to teaching material, research methods, and community service or dedication to the community. They share teaching material in discussions within a KBK or by sharing links or softcopies with their colleagues. The sharing was in the form of collaboration. Lecturer-Unit 1 said,

I share knowledge in teaching material with my colleagues in KBK team. So we share who would do this part, who would do that part. Here is my material, then we put them all together. So we collaborate. We share the work. After that, we report our result to the Head of Technical Study Program.

Knowledge related to research methods was shared through journals by Lecturer-Unit. Lecturer-Unit 2 even gave a consultation on research with people outside the institution. For the community, Lecturer-Unit shared knowledge by collaborating with other colleagues and provided training for the community.

Lecturer-Unit 1 and 2 shared knowledge related to PDP reports, materials, current affairs and key points. Sharing PDP reports was an obligation as it was regulated. The report might include the funding used by the participants. Lecturer-Unit 1 informed, "The report contained the funding that we used, the airplane ticket receipts. I submitted the report to the BEDP managers in the institution." However, sharing the PDP material was not regulated. Therefore, it would not be necessary to share the PDPs material formally. Lecturer-Unit 1 clarified,

I cannot share the PDP material formally as I have no fund to set an activity such as seminars. Anyway, there is no regulation mentioning that I

must share the PDPs material. Some of my friends set seminars to share the PDP material.

Lecturer-Unit 2 also shared PDP key points with her colleagues. Moreover, informal topics or current affairs were shared as well by Lecturer-Unit during recess.

Lecturer-Unit 1 shared knowledge in the areas of the unit's service while Lecturer-Unit 2 shared knowledge in the areas of teaching techniques and expertise. Lecturer-Teaching 1 shared information regarding Professional Certification with her colleagues and students both formally and informally. Meanwhile, Lecturer-Unit 2 shared her knowledge in teaching techniques with her juniors and shared her expertise with her colleagues. Related to sharing knowledge on teaching techniques, Lecturer-Teaching 2 clarified,

I share teaching technique. We must do improvisation while teaching in the classroom. Such when I teach Front Office. I use video about front office or ask them to find the videos, or when they have presentation I provide the little microphone that we attach in their shirt. Students like it. And I can hear them clearly when they talk. I like technology.

Formal and Informal Approaches

This section describes the approach or mechanism used by Lecturer-Unit participants at RS1 during the knowledge sharing process. The findings also show the rationales for using an approach depended on what knowledge is shared, and the effectiveness of the approach to be deployed during the knowledge sharing process. The data indicates that the Lecturer-Unit participants might have similar or different ideas on the effectiveness of the approach deployed.

The findings show that the approach used during knowledge sharing by Lecturers-Unit participants could be formal, informal, or both formal and informal. As was stated previously, the choice of approach by the members of Lecturer-Unit participants depended on what knowledge was shared as stated by Lecturer-Teaching 1, "Well, it depends on what we share...." Lecturer-Teaching 2 also mentioned a similar idea. She recounted, "It depends on what we are going to share..." The knowledge related to *Tridharma* such as the sharing of teaching material, research methods, and dedication to community were shared formally. Teaching material was shared in the KBK meetings and the results had to be reported to the supervisor. Both Lecturer-Unit participants shared their research in journals and the sharing of knowledge with the community was through formal collaboration with the team. However, teaching material and research methods could also be shared informally when they just shared the softcopies of the material.

In the PDP area of knowledge, the sharing of reports was via a formal mechanism as it followed the regulations and fixed format. Meanwhile, the sharing of PDP material and key points was conducted informally as there was no regulation for these. In the area of knowledge of the unit's service, Lecturer-Unit 1 shared information both formally and informally:

These all are through formal mechanism. LSP is under Director. The sharing of knowledge related to LSP unit service may also be in informal situation such as when students ask informally about information. Or other lecturers ask for information. They sometimes ask me about the LSP's activities

The knowledge shared related to current affairs, teaching techniques, and expertise and were shared informally. Information related to current affairs such as celebrities or TV programs was shared during recess. Lecturer-Unit 2 also informally showed teaching techniques to her juniors and shared Asian Toolbox with her colleagues.

The effectiveness of the approach was also one of the factors which underlined the choice of approach. According to Lecturer-Unit 1, the effectiveness of an approach depended on what knowledge was shared. Certain topics (knowledge) were better shared with a particular approach. Lecturer-Unit 1 recalled, "I can't decide which one is more effective. It depends on what we share. If it is just like current affairs, informal approach is effective. But if it is in relation with academic, formal would be the better option." Lecturer-Unit 2 agreed with the choice of an approach which depended on what knowledge was shared. The context of the sharing also influenced the effectiveness of an approach. She added,

The effectiveness of the approach depends on the topic discussed.... I think both formal and informal approaches are effective. Such as when I have to supervise my students for their final report. Sometimes, because at the same time they have to do their work field, they have to do the consultation with me in my house. Morning to afternoon they often have to be in the hotel. So after that they come to my place and we have the consultation. And even though it is informal in nature, it is still effective.

Both Lecturer-Unit participants agreed that both approaches had weaknesses and advantages. According to Lecturer-Unit 1, in a formal meeting the atmosphere was not relaxed. However, in an informal discussion, not many participants got involved in the discussion. She recounted, "In formal meeting, the atmosphere, well, not relaxed. Formal.... For informal approach, well, the participants or recipients are limited. Only few that join in the discussion. Just our close colleagues that we share with." Lecturer-Unit 2 claimed that the discussion might be limited by time but the participants took note of the topic discussed. She remarked,

For formal meeting, such as in classroom activity, we have to focus on the topic. Can't really discuss other topic. It's about time limit... for informal approach, not all recipients pay attention. Join the discussion. But in a formal meeting, the participants pay attention on the topic discussed...

When they were requested to comment on which one was more effective between sharing knowledge through face-to-face interaction or using IT, Lecturer-Unit participants had different opinions. Lecturer-Unit 1 claimed that sharing knowledge through IT was more effective than through face-to-face interaction since daily life was influenced by advanced communication technology. She said,

For today's sharing, I think using IT is more effective. Through social media, for example. I share information related to my classroom activities. I have a social media group with my students. So I share information related to teaching learning in that group. The recipients are a lot. Besides, most of us have social media account.

On the other hand, Lecturer-Unit 2 believed that sharing knowledge through face-to-face interaction was more effective than sharing it through IT as she realised that some of her colleagues are not that interested in using IT. She elaborated,

I think face-to-face interaction is effective. Especially for lecturers at polytechnics. It is more effective because we can directly receive the feedback from recipients. Look, we have WhatsApp group, Facebook group, here for lecturers in here. But not many who are active. Some of them do not care at all, and some, well, pretending not to care about giving response to the discussion... Some of my colleagues not that into IT. So they are more interested in hardcopy. So hardcopy is more effective than softcopy. But some colleagues prefer IT when I share knowledge with them. They read it.

Summary

The knowledge shared by Lecturer-Unit Participants was in the areas of *Tridharma*, PDPs, current affairs, the unit's service, teaching techniques, and expertise. This knowledge related to their obligations and responsibilities as lecturers and members in the organisation who were active in a unit at RS1. The types of knowledge shared could be tacit and explicit knowledge. Most organisational knowledge was created through Socialisation followed by Combination.

The sharing of knowledge could be through formal, informal, or both formal and informal approaches depending on what knowledge was shared and the effectiveness of the approach used. For example, if the knowledge shared related to their obligation as lecturers, the sharing was formal. However, both Lecturer-Unit participants agreed that sharing knowledge in an informal meeting was more relaxed. Sharing knowledge through face-to-face interaction or using IT were both effective according to Lecturer-Unit participants.

5.1.4. Knowledge Shared by Lecturer-Teaching Participants

Section 5.1.4 demonstrates the findings on what knowledge is shared by Lecturer-teaching participants at RS1. Members of Lecturer-Teaching in this section are Lecturer-Teaching 1 and Lecturer-Teaching 2. The presentation is followed by what types of knowledge is shared, how the knowledge is created at RS1 by Lecturer-Unit participants, and what approach they use when they share knowledge.

Lecturer-Teaching participants shared knowledge in the following areas: *Tridharma*, Professional Development Programs, expertise, academic affairs, student' issues, and current affairs. In the area of knowledge *Tridharma*, they shared knowledge related to teaching material, research methods, and dedication to the community or community service. Regarding PDPs, Lecturer-Teaching shared knowledge regarding PDP reports, key points, and information while in regard to academic affairs, they shared information of students' marks and examination questions. Table 5.4 presents findings on knowledge shared by Lecturer-Teaching participants at RS1.

Table 5.4

Knowledge Shared by Lecturer-Teaching Participants at RS1

Lecturer-Teaching 1		Lecturer-Teaching 2	
Types of knowledge shared	What knowledge is shared	Types of knowledge shared	What knowledge is shared
<i>Tridharma</i>	Teaching material	<i>Tridharma</i>	Teaching material
	Research methods		Research methods
	Dedication to community		Dedication to community
PDP	PDPs reports	PDP	PDP reports
Expertise			PDP key points
Academic affairs	Student marks		PDP information
	Examinations questions	Expertise	
Student issues			
Current affairs			

Table 5.4 indicates that Lecturer-Teaching participants shared teaching materials, research methods, and dedication to community in the *Tridharma* area of knowledge. The sharing was through collaboration with other colleagues. Lecturer-Teaching 1 believed that when he shared teaching material, he actually shared knowledge and skills. He detailed,

I share knowledge related to teaching material. That is the main thing to share from 3 main foundations. There are three foundation in academic world: knowledge, attitude, and skill. The knowledge and skill are in teaching material. We can develop them in teaching material. But of course not only through teaching material. I do not only share through teaching material too. I share my experiences as well. Such as I share SOP.

Lecturer-Teaching 2 shared teaching material in the form of hardcopies such as modules. He informed, "When I share teaching material, I share hardcopy document as well. Such as module that I had earlier." Besides sharing in teams or through collaboration, Lecturer-Teaching participants shared their research through journals. Lecturer-Teaching 2 reported, "I also share my knowledge in research methods through publishing my research in journals. Or in seminars. The proceeding journal I mean," When Lecturer-Teaching participants shared knowledge related to community service or dedication to community, both participants shared their knowledge through collaboration with their colleagues when giving training to the community. Lecturer-Teaching 2 noted,

For dedication to community, we share knowledge through working together. We did the work field in the community together. We gave training for community. Based on our background knowledge. Well, we are in tourism department, so we sometimes gave training for guiding. Tourism guiding.

Regarding Professional Development Programs, Lecturer-Teaching participants shared knowledge such as PDP reports, key points, and information. Moreover, they shared their expertise with their colleagues. Sharing PDP reports was regulated by the institution and a formal mechanism. Meanwhile, the sharing of key points with colleagues in KBK from PDPs was not regulated. Lecturer-Teaching 1 stated, "...There is no rule to share the key points with colleagues..." Lecturer-Teaching 2 also shared PDP information with his colleagues and the Director at RS1.

Lecturer-teaching 1 shared knowledge in the areas of academic affairs, student issues, and current affairs. In academic affairs, Lecturer-Teaching 1 shared knowledge related to student marks and examination questions. The sharing of information regarding student marks was conducted normally in formal meetings while the sharing of student issues and current affairs was usually in an informal discussion.

Formal and Informal Approaches

This section presents the findings on the approaches or mechanisms employed by Lecturer-Teaching participants at RS1 during the knowledge sharing process which could be formal, informal, and both formal and informal. The choice

of approach depended on what knowledge was shared and the effectiveness of the approach used to share the knowledge. The findings also took into account the effectiveness of face-to-face interaction and IT in sharing knowledge .

The sharing of knowledge in the *Tridharma* area PDP reports and academic affairs were shared formally. Knowledge related to dedication to the community was shared formally with the community since the sharing was organised by the institution through collaboration among lecturers. However, knowledge related to research methods was shared both formally and informally. It was shared formally when it was through journals, collaboration, and discussed in an academic forum or in seminars, as done by Lecturer-Teaching participants at RS1. Lecturer-Teaching 1 said, "Formal approach is usually used to present our findings. Such as in seminars. It is usually per 6 month. Usually research related." The sharing was categorised as informal which took place when Lecturer-Teaching shared research methods in small group discussions in order to get feedback as was stated by Lecturer-Teaching 2 earlier. The submission of PDP reports was also shared formally as it was regulated by the institution. Regarding academic affairs, the information related to student marks and the discussion on examination questions were shared in formal meetings.

Even though research methods and dedication to community were shared formally or both formally and informally, teaching material as part of the *Tridharma* area of knowledge was shared informally in KBK group discussions at recess time. Other knowledge which was shared informally were the PDP key points, expertise, student issues, and current affairs.

Related to the effectiveness of both formal and informal approaches, the two Lecturer-teaching participants agreed that the informal approach was more effective when sharing knowledge. Lecturer-Teaching 1 informed, "I think informal approach is more effective for sharing knowledge. Because there is no target, no pressure, and people who need it will join in and because they are interested, they are serious during the meeting." Lecturer-Teaching 2 added,

I think informal meeting is more effective than formal meetings. Because to set a formal meeting, we need time to organise it. I like the atmosphere in an informal meeting. I feel more comfortable to share knowledge in a formal meeting. More freedom in an informal meeting.

Besides the above reasons, there were also other factors that supported an informal approach as being more effective. Lecturer-Teaching 1 considered an informal approach as more effective because in an informal discussion, there might be fewer participants so the discussion would be less intimidating, it could be held

anytime, more knowledge could be gained in an informal activity, and the atmosphere was more relaxing. He elaborated,

The informal meeting is effective because it does not involve many participants. Just 3 participants. If we make the discussion into a formal meeting, I am worried if it would be scary.... we do not need to wait so long to set a meeting for sharing knowledge with informal approach. We can do the sharing anytime... I get a lot of knowledge informally through my activities outside institution work. Well, besides lecturing, I am a tour guide. I learn a lot from my activity while doing this tour guiding. I find out what happens in the industry, tourism industry... As no pressure, we feel relaxed. We might find something more than what we expect..."

Lecturer-Teaching 2 supplemented the points for an informal approach being more effective than a formal one. He considered an informal approach was not restricted by time and he felt closer [to participants] in an informal discussion. He explained,

Only formal meetings, well, sometimes not enough. We do more informal after. Or when we make a decision in a formal meeting, but if we need to change something a little bit, we do not need to set a new formal meeting.... My activities are more in informal meetings because we often talk. We feel more comfortable and closer in informal meetings. With formal meetings, there are many participants.

However, Lecturer-Teaching 1 admitted that formal discussions were still needed even though they were just a formality. Therefore, even though he considered informal approaches as more effective than formal approaches, he believed the semi-formal approach was the best. He reported,

Formal meeting is just a formality. Like when we study, at universities, we get certificate. We just get the theories. But the real study is when we get into the workplace, industry. But we still need the theory...As I said before, we still need the theories from formal meeting, so the best approach I think would be semi-formal. So after formal, followed by informal activity. Such as after formal research, followed by lunch. Informal. We can talk while having lunch...or semi-formal like in classroom. For students. Table manner subject where they learn table manner formally in the classroom. But then, they do the practice, applied the theory outside classroom or universities.

Lecturer-Teaching 1 and 2 had different opinions regarding which method, face-to-face or through IT, was more effective. Lecturer-Teaching 1 assumed face-to-face interaction for sharing knowledge was more effective. IT was viewed as less reliable and only as a complementary tool. He claimed,

I prefer face-to-face interaction that using IT for sharing knowledge. More effective. We can hear directly, see directly. IT just a tool. What happen if we want to share knowledge but IT does not work? What can we say then? IT is just a complementary. Supplementary. Like this, we discuss topic A. then alright, I send you the softcopy

He assumed that culture influenced the effectiveness of face-to-face interaction for sharing knowledge. He clarified,

IT is not as effective as face-to-face interaction. Well, it has something to do with our culture. Influenced by culture. Our culture is not reading culture, yet. Like this. I gave an article for my domestic tourist. A synopsis. He didn't read it. He asked, what as that? Could you please explain it to me? So reading culture is not in our Indonesian culture yet. Maybe in Australia it is. But not for people here... such as a friend show me his iPad. Asked me how to operate things there. I said, there was a manual booklet. He said, no. just explained it to me. Then after I explained it to him, he started opening his booklet. Especially the seniors.

On the contrary, Lecturer-Teaching 2 considered sharing knowledge through IT was more effective for today's world and there was no time limit. He commented, "For today world, I think sharing knowledge through IT is more effective because no time limit. We can share information anytime. With face-to-face interaction, we must prepare the time and place... I sometimes share teaching material in Facebook"

Summary

The knowledge shared by Lecturer-Teaching participants was in the areas of *Tridharma*, PDPs, expertise, academic affairs, student issues, and current affairs. These areas of knowledge were mostly related to their obligations as lecturers at RS1. The knowledge shared could be tacit and explicit knowledge. Most knowledge in the organisation was created through Socialisation and Internalisation.

How Lecturer-Teaching participants at RS1 shared knowledge depended on what knowledge was shared and the effectiveness of the knowledge. They used a formal approach if the knowledge related to their obligation as lecturers. They agreed that an informal approach was more effective than a formal one and that face-to-face interaction was more effective than sharing knowledge through IT.

5.2. Within-Case Analysis Research Question 1

Similarities and differences existed in the nature of the knowledge shared by participants at Research Site 1 as illustrated in Table 5.5.

Table 5.5

Knowledge Shared by Participants at RS1

Area of knowledge	What knowledge shared	Participants			
		Top Manager	Middle Managers	Lecturer-Unit	Lecturer-Teaching
<i>Tridharma</i>	Teaching material	√	√	√	√
	Research methods	√	√	√	√
	Dedication to community	√	√	√	√
PDPs	Reports	√	√	√	√
	Key points from PDPs	√	√	√	√
	PDP materials		√	√	
	Information from PDPs	√	√		√
Management		√	√		
Policies		√			
Summary of informal meetings		√			
Current affairs		√	√	√	√
Expertise			√	√	√
Passed on/forwarded information [any information but usually academic related information such as conferences or seminars]			√		
Administrative issues			√		
Feedback after a formal meeting			√		
Unit's service (the service provided by the unit they were active in)				√	
Teaching techniques				√	
Academic affairs					√
Student issues					√
How to make a proposal					√

The interviews with top and middle managers revealed that while they shared information about all three areas of *Tridharma*, PDP reports, key points arising from

PDPs and current affairs along with Lecturer Unit and Lecturer Teaching, unlike these two groups of lecturers they also both shared knowledge relating to management. Only the top manager shared policies and summaries of informal meetings. By comparison, the middle manager shared knowledge associated with expertise and administrative issues, information (related to their job or current affairs) and provided feedback to staff about discussions that occurred in formal meetings. Lecturers Unit and Lecturers Teaching also shared knowledge allied to their expertise, however, whereas Lecturers Unit reported they shared knowledge about the Unit's service (such as information about certification which was organised by the unit they were active in) and teaching techniques, Lecturers Teaching claimed they shared information connected to academic affairs, student issues and developing a proposal [research proposals or proposals for events or programs]. PDP materials were only shared by Middle Managers and Lecturers Unit at RS1. Information from PDP's was shared by all except Lecturer Unit.

Top and Middle Managers shared both individual and collective tacit and explicit types of knowledge. Lecturer-Unit participants and Lecturer-Teaching participants mostly shared individual tacit and explicit knowledge. All groups of categories shared knowledge both tacit and explicit. The explicit knowledge was often shared in order to complete and as the follow up of the tacit knowledge they shared.

In general, participants at RS1 created the knowledge in their organisation through Socialisation. Top Managers and Lecturer-Teaching participants second way of creating the organisational knowledge was through Internalisation. Creating knowledge through Combination was the second option for Middle Managers and Lecturer-Unit participants to create the organisational knowledge.

In general, the approach used by participants at RS1 to share knowledge depended on what knowledge was shared and the effectiveness of the knowledge to be shared. They agreed to share knowledge using formal mechanisms if the knowledge shared was related to their obligations or responsibilities. However, Middle Managers at RS1 had other criteria in deciding the approach used to share knowledge. The approach employed also depended on with whom the knowledge was shared. Top Managers and Lecturer-Teaching participants mentioned that face-to-face interaction was a more effective method of sharing knowledge than sharing knowledge using IT. Meanwhile, according to Middle Managers, the choice of methods whether face-to-face interaction or using IT, depended on what knowledge was shared, the speed, and the cultural correctness. Lecturer-unit participants

explained further that the choice of using face-to-face interaction or using IT to share knowledge depended on what knowledge was shared, the speed, and the cultural correctness.

5.3. What are the Participants' Motivations to Share Knowledge?

This section describes the participants' motivations to share knowledge and is distributed into four major sub-sections. Each sub-section describes four different groups of participants: Top Managers (Director and the First Director's Assistant), Middle Managers, lecturers who are active in a unit (Lecturer-Unit), and lecturers who do not hold any structural positions and are not active in a unit (Lecturer-Teaching). Sub-sections individually describe the findings on the motivations to share, the intrinsic and extrinsic factors of motivation, and the summary of findings. Tables are also provided to support the presentation of the findings.

5.3.1. Top Managers

The findings revealed that relationships with recipients, being acknowledged by others, sharing knowledge to create power (the power of knowledge sharing), and to get something in return motivated the members of Top Managers. Other motivations to share were: obligation, tangible reward, perceived power to knowledge, and responsibility. Table 5.6 describes the motivations for Top Managers at RS1 to share knowledge.

Table 5.6

What Motivates Top Managers at RS1 to Share Knowledge?

The Director	The First Director Assistant
Relationship with recipients	Relationship with recipients
Being acknowledged by others (the power of knowledge sharing)	Being acknowledged by others (the power of knowledge sharing)
Sharing knowledge to create power	Sharing knowledge to create power
To get something in return	To get something in return
Obligation	Responsibility
Tangible reward	
Perceived power to knowledge	

Top Managers' motivations to share knowledge were associated with their obligation as lecturers and responsibilities as Top Management, and as part of a team. They shared knowledge because they were motivated by their obligations, responsibilities, relationships with recipients, to create more power, and to get

something in return. The Director at RS1 was also motivated by his obligation, tangible reward, and perceived power to knowledge while the First Director Assistant was motivated by his responsibility.

There are also aspects that influenced motivation such as culture, obligation, and structural position. Influenced by culture, they shared knowledge because they belong to a group such as KBK or an expertise group. It is a collective culture that affects motivation, so they feel it is their responsibility to share knowledge as part of the group. The Director accounted,

“ such as our togetherness in hydraulic group. It is just that the tradition is built because we have similar expertise...we share because we have similar background knowledge...I have to share knowledge to anybody here. There is a responsibility in similar proficiency group.”

Culture also influenced the reciprocity motivation (to get something in return). They shared knowledge because of the culture of *Tri Hita Karana*, the balanced principle. Every human deserves to get similar things, so that everything is in balance. It was about doing good things to other people as well, which was highly recommended by their religion/culture to keep nature in balance. Top Management at RS1 said,

“...there is one strong culture in Bali, we call it Tri Hita Karana. It is about the relationship with humans, our relationship with Gods, and our relationship with nature. We always think about balance. For example, if we connect to other humans, it will have no meaning as we do not give benefit for Gods and nature as well.....that is Balinese concept. The culture....so the relationship with humans cannot be measured by financial reward as in takwamasi, I is you, you are me....so you and me are the same. If I get something, you get something too. If you lose something, I lose something too. Bali culture is very strong. Another culture is.....do not feel that you know better than other people.....”

The motivations to share such as responsibility, to get more power, recognition, perceived power to knowledge, and tangible rewards were influenced by structural positions. Their structural position made them feel that they were responsible for sharing knowledge with other members. The First Director's Assistant clarified,

“I share knowledge to give prime service. That is out motto actually. to provide prime service for stakeholders. That is part of my responsibility... Maybe because I am one of the management team, so I think about sharing training result. I actually want to give the sample for others. ...maybe because my structural position...”

Top Management at RS1 also believed that knowledge was power. They realised if they shared knowledge, they would be more powerful which was needed

in order to be in the Top Management level, or to get other members attention so that they were recognised. The Director at RS1 explained,

“...sharing knowledge does not decrease my power. Contradictory, we will get something new again. It will increase our power. ...My knowledge will increase if I share the knowledge...When I share the knowledge, they give response. The response or feedback is a new knowledge for me. Something that we can use, something useful...”

The First Director’s Assistant added,

“ ... I gave response. Reaction to what they say. Add something maybe...they come, and then they come again. It means I give something good or useful. They feel it. Then they also will share a lot to me...It is hoped that when I share the knowledge, I share the power to move or change. It is not only sharing the knowledge, but I wish that they understand, and will implement the knowledge, and share it to others too. So the knowledge will be improved, changed, not static...When we share, we get feedback. That is new knowledge for me. Let’s say I give one, I might get one or even more actually. Besides, the feedback will complete my knowledge.”

The knowledge itself was believed to be a power that enabled change. The Director noted, “if one has knowledge, he has power to change, to change something. Find new idea, new knowledge. Only knowledgeable people will change.” In the end, the recognition from members was important to support their structural position. They felt that by sharing knowledge they would be a model for other members. The Director at RS1 elaborated,

“ I feel useful. for example, if what we share is used in a teaching module for example, or what I got is used to generate something new, either related to my background knowledge or organization, or water management in Bali, or the knowledge is applied, or when what I share is used as their reference in their teaching module...When that happens, I am so proud...”

The First Director’s Assistant added,“ ...because I share knowledge, more and more friends come to me...I feel satisfied that way. I feel useful. That is the reward...”

Meanwhile, the tangible rewards they expected to get were a certificate for themselves which was needed to upgrade their level. By upgrading their level, they expected that their position would also be upgraded. The Director expected financial reward as well. However, it was not for him. It was for the institution so that he could develop the institution as part of his responsibility as Top Management. The Director informed,

“...However, we really have to interpret the foundation or DIKTI’s policies carefully. If the director’s policies or our programs do not match the DIKTI’s policies, it will be hard for us to get the funding. We have to interpret the policies accurately...”

When they shared knowledge related to their obligations, they felt obligated to share it because it actually influenced the rules or policy as an educational institution. They feel concerned if they do not do that as it would disadvantage them and also break the rules or policies. As the Director recalled,

“...besides the certification as an effective weapon, we also have policy, especially related to the policy to develop knowledge in forums...as a high educational institution, we must follow DIKTI's policies. If the director's policies or our programs do not match the DIKTI's policies, it will be hard for us to get the funding. We have to interpret the policies accurately.”

Influenced by his obligation as a lecturer, he was obliged to share the teaching material. He explained,

“...One subject is taught by more than one lecturers. Therefore, however, the material we transfer to the students has to be similar. I mean the handout or teaching module has to be the same to all of students...In Polytechnic, we have an obligation as lecturers to make teaching module, handout for the students. So the sharing is not only with the lecturers but also to the students...because there is a research activity in Bali State Polytechnic and all lecturers must conduct a research every year here... as an academic institution, we have a weapon, certification. For the lecturers...”

Further findings are explained below.

Obligation

The Director at RS1 assumed KS as an obligation. The sharing of teaching material was usually with students and lecturers who teach similar subjects. Another rule is that as a lecturer, he must conduct research. KS in the academic forum is important because he will also get new ideas for new research. Besides, there is a policy regarding developing knowledge in the academic forum. The Director explained,

“... obligation as lecturers to make teaching module, handout for the students. ...Because there is a research activity in Bali State Polytechnic and all lecturers must conduct a research every year here, therefore, it is hoped that sharing knowledge takes place in the forum. ... we also have policy, especially related to the policy to develop knowledge in forums. ...”

Responsibility

As a member of a KBK group, it was his responsibility to share knowledge in the group. The Director informed, “...There is a responsibility in similar proficiency group.” Meanwhile, the First Director's Assistant thought that it was his responsibility to share knowledge in order to give prime service to stakeholders. By sharing knowledge, he also wanted and was motivated to be a role model so that other members shared knowledge as well. His position as the First Director's Assistant also drove him to share knowledge. The First Director's Assistant noted as

it was stated earlier, "... To provide prime service for stakeholders... That is part of my responsibility... Maybe because I am one of the management team, so I think about that. ... maybe because my structural position."

Belong to a group (relationship with recipient)

If the subject was taught by more than one lecturer the material had to be the same. It made the Director and the First Director's Assistant share knowledge with other members in the group so that they had similar teaching material. Having similar expertise with other friends also encouraged them to share knowledge. They had commitment within the group to develop their expertise. For the First Director's Assistant, sharing knowledge was to avoid differing perceptions toward teaching material, he must share knowledge with other lecturers who taught similar subjects. The Director explained,

"... Therefore, however, the material we transfer to the students has to be similar. ... The handout in the end must be developed based on new experience shared in the KBK.... of our togetherness in hydraulic group. It is just that the tradition is built because we have similar expertise..."

The First Director's assistant added, "... so that we have similar perception, teaching material..."

Knowledge has to be shared to create more power (the power of sharing knowledge)

The Director believed if one had knowledge, he had power to change. By sharing knowledge, the Director and the First Director's Assistant reflected they would get more knowledge from others which could increase their power. They assumed that when they shared knowledge with recipients, those recipients would give feedback or share something new to them and this process advanced their knowledge. Because knowledge was power, the more knowledge they had, the more powerful they would be. The Director recalled, "... The good knowledge will bring good things. ... We will get something new again. It will increase our power... when we share, we usually get feedback. We get response. It will increase our power. ..." He First Director's Assistant said: "... My knowledge will increase if I share the knowledge..."

To get something in return

The Director and the First Director's Assistant assume that by sharing knowledge, they will get something back, or get new knowledge. For the Director, it can be new knowledge, the balanced relationship of humans, Gods, and nature,

doing a good deed as it is ruled by his religion or concept in his culture (if I get something you will get something too). The First Director Assistant 1 expects the recipients to share the knowledge he shares with other people. Not only that, the new knowledge may complete his knowledge. He believes if he does not share, he will not get new knowledge. The Director illustrated,

“By sharing, we will get something new again. It will increase our power. ... A lecturer will get new knowledge, for example there is someone who will present a training material or a research proposal, by joining in the forum there will be new knowledge that may give an idea to a new research.... there is one strong culture in Bali, we call it *TriHita Karana*. It is about the relationship with humans, our relationship with Gods, and our relationship with nature. We always think about balance...if I get something, you get something too...”

The First Director’s Assistant explained,

“When we share, we get feedback. That is new knowledge for me. Let’s say I give one, I might get one or even more actually. Besides, the feedback will complete my knowledge... I feel satisfied because I can give something useful and not only that, I also get new knowledge, because I share knowledge, more and more friends come to me... Then they also will share a lot to me... Maybe, my knowledge need to be completed by others who may know about the topic... Moreover, because we do not share, we will not get new knowledge.”

Being acknowledged by others (recognition)

Being acknowledged by others also motivated the Director and the First Director’s Assistant to share knowledge. The Director felt useful, as his work was used by others as a reference. This feeling made him proud of himself, especially when the knowledge he shared was used by others. It was a reward for him. The Director recounted,

“I feel useful... or when what I share is used as their reference in their teaching module. The source is, one of them, is my thesis. When that happens, I am so proud...For example if a D4 student does her thesis and use the knowledge that once we shared to her...well, that is the reward...”

For the First Director Assistant at RS1, being an example for others was his intention. He was also motivated to share knowledge because he became the centre. More and more people come to him for advice. He said, “... I actually want to give the sample for others. So when we finish a training, we should share it with our friends... Because I share knowledge, more and more friends come to me...”

Tangible reward

The Director at RS1 shared knowledge because he expected to get something such as a certificate. He also projected financial reward, not money for himself, but funding for the organisation he led. The Director described,

“... Certification. For the lecturers, it is a very effective weapon. ... well, as a high educational institution, we must follow DIKTI’s policies. ...If the director’s policies or our programs do not match the DIKTI’s policies, it will be hard for us to get the funding. We have to interpret the policies accurately”

Summary

Top Managers at RS1 shared knowledge motivated by relationships with recipients, being acknowledged by others (the power of knowledge sharing), and sharing knowledge to create power. They also wanted to get something in return, were obligated, sort tangible rewards, perceived the power of knowledge, and had responsibilities. The motivations could be either intrinsic or extrinsic or both.

5.3.2. Middle Managers

This section presents the findings on what motivated Middle Managers at RS1 to share knowledge. The Middle Managers were Middle Manager 1, Middle Manager 2, Middle Manager 3, Middle Manager 4 and Middle Manager 5 (Table 5.7). The findings illustrate that to get something in return, being acknowledged, obligation, the power of knowledge sharing, responsibility, equality and assurance motivated Middle Managers to share knowledge. Other motivations to share were: culture, to create a conducive atmosphere, to strengthen understanding, and to get support.

Table 5.7

What Motivated Middle Managers at RS1 to Share Knowledge

Participants				
Middle Managers (MM) at RS1				
MM1	MM2	MM3	MM4	MM5
To get something in return	To get something in return	To get something in return	To get something in return	To get something in return
Obligation	Being acknowledged by others	Being acknowledged by others	Obligation	Being acknowledge by others
The power of sharing knowledge	Responsibility	The power of sharing knowledge	The power of sharing knowledge	Obligation
Responsibility	Assurance		Responsibility	Assurance
Equality	To feel “lighter” [lighter mind, no burden]	Culture	To create conducive atmosphere	To strengthen understanding
			To get support	Equality

Middle Managers at RS1 hoped they would get knowledge in return if they shared knowledge with others. Gratitude influenced their expectations as it was stated by Middle Managers 1 and 3.

The details of the finding are presented below.

To get something in return

All Middle Manager participants expected other colleagues would share knowledge with them if they shared knowledge first with others. For Middle Manager 1 and 3, it was about gratitude to those who shared knowledge with them. It made them need to share something back and it was about sharing with others because not all members had similar opportunities. So they must share what they had learnt with other members. Middle Manager 1 said,

“...not all of us can go. ...Socializing what the training is about. Therefore, those who cannot attend the training will also get the knowledge...because when we share our knowledge, our friends share their knowledge to us too. ... I felt like having to give her information too...”

Middle Manager 3 added, “... I feel gratitude sometimes.” When Middle Manager 2 shared knowledge for example his ideas or research in an academic forum, he expected that he could get feedback from his friends in department regarding his research proposal to improve it.”

Middle Manager 2 stated, “...Then in that forum we will ask other friends ideas and feedback to improve the proposal. So, in this scientific forum we share it...”For Middle Manager 3, it was about having feedback from the recipients. As the result of his friends’ enthusiasm, the discussion would go on even further. Middle Manager 3 noted, “..... my friends’ feedback.”. Meanwhile, Middle Manager 4 considered her friends would share knowledge back if she shared knowledge. As she also shared knowledge with her students, she believed that she would get knowledge from her students. For example, when her students shared their experience during work field. Middle Manager 4 remarked, “... when they get new knowledge later, they will share them to me... But when they come back, they bring their experience from the training, and they present it.” Middle Manager 5 noticed that by sharing knowledge, he could improve his knowledge or the knowledge itself especially when his friends gave feedback related to the weakness of his knowledge. He also expected, as he shared his knowledge, that one day, his friends would help him when he needed help. Middle Manager 5 commented, “Moreover, if I have a problem, they will help me out.”

Being acknowledged by others

Middle Manager 2, 3, and 5 shared knowledge because they needed the recognition from others. For Middle Manager 3, that his ideas were accepted by others was very important. It was self-existence for him. He shared knowledge to show others he had new knowledge. Middle Manager 3 recalled, "...To show them I have knowledge. It is for self-existence...it is more about want to show to others that I have something new to share." Middle Manager 2 was proud as the information comes from him. He needed the acknowledgement from others. For Middle Manager 5, being used as a reference or an example was a reward and it made him feel like an expert. Besides, his colleagues would also be encouraged to learn more. As an expert in applied science, Middle Manager 2 felt acknowledged when the community came to him and asked for his help in applied science. For example, they asked for an invention,. Middle Managers 2 and 5 also thought that if they shared knowledge, people would think they had a lot of knowledge. Therefore, sharing knowledge for them was important. Middle Manager 2 believed he would be placed in a special place by his friends. If he did not share knowledge, how would people recognise if he was talented or knew a lot of knowledge. It was an honour for him to be called an expert and people came to him when they had problems. Middle Manager 2 stated, "I feel so proud of myself. I am proud if the information comes from me. I have searched for it... Like, please welding expert, what we can do. Like that. Please the control expert, how to make its control...The more I share knowledge to friends, they will think that I have a lot of knowledge. ... They conclude I know better. They call me: an expert. I feel powerful..." Middle Manager 5 recounted, "...use me a reference. If they have problem, others will suggest to come to me. I feel like I am an expert... by sharing the information, other friends here learn as well. They are encouraged to learn more"

Obligation

Sharing knowledge is an obligation for Middle Managers 1, 4, and 5. They shared knowledge because it was what the director asked them to do, it was their obligation as lecturers, and there is the requirement to improve themselves especially the need to advance their knowledge. Middle Manager 5 believed that by sharing knowledge they would advance their knowledge which in the end would improve their knowledge. Middle Manager 1 noted, "the director, always says to share the information, knowledge..." Middle Manager 4 added, "I am a lecturer, I

must share knowledge. It is an obligation..." Middle Manager 5 remarked, "...sharing knowledge is an obligation..."

The power of sharing knowledge

Middle Managers 1, 3 and 4 assumed that by sharing knowledge they actually could gain more power. Middle Manager 1 said, ". If we do not want to share, hoard the knowledge, our power is static..." By sharing knowledge Middle Manager 3 believed that he could improve the administration, teaching systems, and the institution's weaknesses for the following semester and by doing so many people would become familiar with it and acknowledged the knowledge. As a result, he would get support from other colleagues which in the end created more power for him. Middle Manager 3 recounted, "...my motivation is to improve our department administration. To improve our teaching system. ... I think sharing knowledge is actually can increase my power...then we share that to our top management. We have more power here because more people agree." Middle Manager 4, believed that if she shared and received more knowledge she would be even more powerful. She said, "In my opinion, knowledge, the more you share, you will get even more knowledge. Sharing knowledge increases my power."

Responsibility

As a heads of department, Middle Managers 1, 2 and 4 felt that sharing knowledge was part of their responsibility. Middle Manager 2 believed that sharing knowledge, with students or the community, was his responsibility. Middle Manager 2 remarked, "... So in commitment to community, I share about machine construction for example..." Therefore, sharing knowledge with the community meant that he fulfilled the dedication to community requirement. Middle Manager 1 noted, "...As management in the department, it is my responsibility to share the information to other members in the department." Meanwhile, Middle Manager 4 mentioned, "my motivation to share teaching stuff and research information is my responsibility....."

Assurance

Middle Managers 2 and 5 shared knowledge to find out what they knew was right. So sharing was an opportunity to find out if the knowledge they (both senders and recipients) had was correct because the feedback would assure them if what they knew was true. They believed that assurance of knowledge was important for people in the academic sector. Middle Manager 2 mentioned, "...at

least we will find out if what we know is right or not. Middle Manager 5 said further, "...We just want to assure that they get it right. We give feedback..."

Equality

Middle Managers 1 and 5 believed people must have an equal opportunity to get knowledge. Those who received new knowledge should share it with others so that they have the knowledge as well. Middle Manager 1 believed in the need to share knowledge as funding would not always be adequate enough to give all members a similar opportunity to gain new knowledge. Therefore, in order for all members to gain similar knowledge, those who had new knowledge must share it with other members. If all members had new knowledge, and if one day they had to upgrade the knowledge, they all could do it. Middle Manager 1 remarked, "...not all of us can go. ...Socializing what the training is about. Therefore, those who cannot attend the training will also get the knowledge..." Meanwhile, Middle Manager 5 reflected that his past life influenced his desire to share knowledge with others. Middle Manager 5 stated, "... because when I wanted to go studying, we did not have money. Now, when I have such a good opportunity, I want to share..."

Culture

Culture was Middle Manager 3's motivation to share knowledge as RS1 had a collaborative culture,. Middle Manager 3 said, "well, it is culture. Naturally happen. ..."

To create a conducive atmosphere

Middle Manager 4 believed sharing knowledge would create a conducive atmosphere in his department. Middle Manager 4 noted, "my motivation for sharing social stuff is to create a conducive atmosphere....."

To strengthen one's understanding

Middle Manager 5 believed if he shared knowledge, he would have a better understanding of the knowledge. Not only that, he could improve what he knew if he shared knowledge. Middle Manager 5 informed, "...we strengthen each other's understanding actually. ... I improve what I have said. ..."

To get support

Middle Manager 4 assumed that other people must know what she knew so that when she needed support during discussions, there would be no miscommunication. Middle Manager 4 recounted, "... if one day I need something,

and they do not understand because I have not given the knowledge, miscommunication will happen”

To feel ‘lighter’ [lighter mind, no burden]

Middle Manager 2 also assumed, if he shared knowledge, it meant, more people knew the knowledge. If more people knew about the knowledge, when he had a problem, more people would help. He felt “lighter”. Middle Manager 1, “...Hhmm...with specialisation like my expertise, hhmm..the more I give, I will feel lighter I guess... So if we have a problem related to the context of the knowledge I share, there will be more people think about the problem. ...”

Summary

Middle Managers motivations to share knowledge were to get something in return, a sense of obligation, the power of knowledge sharing, responsibility, equality, being acknowledged, assurance, to feel “lighter”, culture, to create a conducive atmosphere, to get support, and to strengthen understanding. The motivation could be intrinsic and/or extrinsic.

5.3.3 Lecturer-Unit Participants

This section presents data on what motivated Lecturer-Unit participants at RS1 to share knowledge. The findings demonstrate that obligation, being acknowledged, the power of knowledge sharing, to share a positive aura, unifying, responsibility, to achieve the objectives, equality, religious factors, and to maintain self-image motivated Lecturer-Unit participants. Table 5.8. demonstrates these motivations.

Table 5.8

What Motivates Lecturer-Unit Participants at RS1 to Share Knowledge

Lecturer-Unit 1	Lecturer-Unit 2
Obligation	Obligation
Being acknowledged (recognised)	Being recognised
The power of knowledge sharing	The power of knowledge sharing
To share positive aura	Unifying (teaching material)
	Responsibility
	To achieve the objective
	Equality
	Religious factor
	To maintain self-image

Obligation

Lecturer-Unit 1 shared knowledge as she felt obliged to while Lecturer-Unit 2 shared knowledge as sharing knowledge is 'a must' thing to do. Lecturer-Unit 1 said,

“...obligation. So I share knowledge related to teaching material because it is my obligation to share during my collaboration with other colleagues. This is obliged by our lecturer certification regulation. So this is our number 1 obligation.” Lecturer-Unit 2 added: “It is a must. If we have knowledge, we must share it...”

Being acknowledged (recognised)

Both Lecturer-Unit participants shared knowledge as they were acknowledged for it. Lecturer-Unit 1 stated, “I share because sharing makes me feel very proud if I can share knowledge to my colleagues. Such as when I share knowledge related to PDPs material. Or when I can share my research in journal. I feel very proud. Recognised. It is not easy to publish our research in a journal.” Lecturer-Unit 2 noted, “sharing knowledge is helping people. And I feel very proud of it. I feel very proud if I can share knowledge to others. So it means I have something. I have the knowledge. I like being recognised. It's humane.”

The power of knowledge sharing

Lecturer-Unit 1 and 2 realised the power of knowledge sharing. Lecturer-Unit 1 mentioned, “Knowledge is a power to open our mind, our ways of thinking. When I share knowledge, it actually motivates me to find new knowledge or deepen the knowledge that I just shared. Therefore, we could share even more knowledge to our students, colleagues...” Lecturer-Unit 2 affirmed, “Sharing knowledge is like 2 minus 2 equal to 4. It means, when we share knowledge, our knowledge is increased. This happens because when we share knowledge, the recipients will give feedback to us. Therefore, we gain more knowledge.”

To share positive aura

Lecturer-Unit1 believed that she shared her positive aura when she shared knowledge. She noted, “When we share knowledge, we share our positive aura.”

Unifying (teaching material)

Lecturer-Unit 2 shared knowledge motivated by her intention to unify the teaching material. Unifying teaching material was important as the students must receive similar teaching material even though they are in different classrooms. Lecturer-Unit 2 stated,

" The Advisors from TAFE Adelaide show us how to teach in vocational institution like polytechnic. It is a good system for teaching in here. The advisors told us that even though there are different classes, the teaching material has to be similar. The same. We must unify our teaching material that we are going to teach in those different classes. We might use different techniques, but teaching material has to be the same. So we must share it, discuss the teaching material in group. This is what I also share to the new lecturers at (RS3). The new lecturers do not have this information."

Responsibility

Lecturer-Unit 2 believed that sharing knowledge was one of her responsibilities such as when she had to submit PDP reports. Lecturer-Unit 2 mentioned, "I submit a PDP report after attending a PDP because it is our responsibility that we must do after attending a PDP. Especially when the program, the PDP, was workplace funded"

To achieve the objective

Lecturer-Unit 2, shared knowledge motivated by the intention to achieve a particular objective. Lecturer-Unit 2 stated,

"I share the Asian Toolbox so that we can design a curriculum which is like the curriculum in Asian. That is the objective in the end...The sharing of knowledge such as the Asian Toolbox was aimed at helping colleagues so that their students could easily do the examination when they must have the competencies examination"

Equality

Lecturer-Unit 2 was motivated by equality when she shared knowledge. She wanted other colleagues to gain what knowledge she had. Lecturer-Unit 2 affirmed, "I share PDP material or key points to my colleagues because I want my colleagues have equal knowledge with me. Look, I am appointed to join the training. Then I should share to them so that they also have the knowledge that I receive during training."

Religious factors

Religious factors were one of Lecturer-Unit 2's motivations to share knowledge. She said, "I think religious factors influence my motivation to share knowledge. If we share knowledge, we do something good. And it is universal. So we share not only to people from [the province where RS1 is] but to other people. I supervised the Final Report in this [RS1]. But other students from [one of the universities in the province where RS1 is] asked me to supervise them."

To maintain self-image

Lecturer-Unit 2 shared knowledge as she did not want others think that she was stingy. She said, “I like sharing knowledge to my colleagues. I think, well... I don’t want people think I am a stingy person.”

Summary

The Lecturer-Unit participants at RS1 shared knowledge because they were motivated by obligation, being acknowledged, the power of knowledge sharing, to share positive aura, unifying, responsibility, to achieve the objective, equality, religious factor, and to maintain self-image. Their motivation could be intrinsic and extrinsic.

5.3.4 Lecturer-Teaching Participants

Section 5.3.4 presents the findings on what motivated Lecturer-Teaching participants at RS1 to share knowledge. Lecturer-Teaching participants in this study were Lecturer-Teaching 1 and Lecturer-Teaching 2. The findings described that completing each other, being acknowledged (recognition), the power of knowledge sharing, and obligation were their motivations. Other motivations were influencing people, unifying, getting feedback, delivering the correct teaching material, feeling as one/in the same team, donation, and humanity. Table 5.8 demonstrates the motivations for Lecturer-Teaching participants at RS1 to share knowledge.

Table 5.9

What Motivates Lecturer-Teaching Participants at RS1 to Share Knowledge

Lecturer-Teaching 1	Lecturer-Teaching 2
Completing each other	Completing each other
Being acknowledged (recognition)	Being acknowledged (recognition)
The power of knowledge sharing	The power of knowledge sharing
Obligation	Obligation
Influencing people	Delivering the correct teaching material
Unifying	Feeling as one/in the same team
Getting feedback (reciprocity)	Donation
	Humanity

Completing each other

Both Lecturer-Teaching participants shared knowledge so they could complete each other. Lecturer-teaching 1 said, “I do the sharing so that me and my colleagues find something that we may miss.” Lecturer-Teaching 2 added, “I share

knowledge so that my colleagues and I complete each other...I share my research methods in an academic forum. I share in that formal forum so that I can get feedback from the participants in that forum. We complete each other."

Being acknowledged (recognition)

Lecturer-Teaching 1 and 2 shared knowledge so that they were recognised. Lecturer-Teaching 1 believed if he shared knowledge people would look up to him. Lecturer-Teaching 1 noted, "When I share knowledge, people will respect me, believe me. People will look up me and we get more points...When I share knowledge and people support my idea, I feel happy. Proud... When our colleagues accept our ideas, we feel alive. Stronger. People think we have charismatic character. Strong character" Lecturer-Unit 2 added, "I feel proud when I have something new, new knowledge, to share to my colleagues."

The power of knowledge sharing

Lecturer-Teaching participants realised the power of knowledge sharing. Lecturer-Teaching 1 mentioned, "Knowledge is power. But when we share knowledge, we are even more powerful. For example, if we share knowledge and then our colleagues agree with our ideas. We feel stronger." Lecturer-Teaching 2 said that his knowledge was increased when he shared it. He notes, "If I have knowledge, it means I have power to teach. When I share knowledge, the knowledge is actually will increase. I mean, more people know the knowledge. Not only me who know now."

Obligation

Lecturer-Teaching 2 believed that sharing knowledge was his obligation such as submitting PDP reports. He affirmed, "I did many trainings or seminars. After attending them, I must submit a report to the supervisors what we had done during the programs...Second motivation is that what we share is part of *Tridharma* application."

Influencing people

Lecturer-Teaching 1 said that he was motivated by his intention to influence people. He noted, "I share knowledge I feel satisfied. We can influence other people. We can change people as we like them to be."

Unifying

One Lecturer-Teaching participant considered sharing knowledge to unify the examination questions in teaching material. Lecturer-Teaching 1 noted, "We usually share knowledge to unify the question for examination...We also share to unify the task we give to students. So we collaborate in this teaching-learning material. We complete each other. So the result will be the same"

Getting feedback (reciprocity)

Getting feedback became one of Lecturer-Teaching 1's motivations to share knowledge. He stated, "Before I submit the research, to be published, I share it with my colleagues in small discussions. I do the sharing so that I can get feedback from them. Just informally."

Delivering the correct teaching material

Lecturer-Teaching 2 expected by sharing knowledge he could deliver the right teaching material to his students. He pronounced, "I shared teaching material in KBK. KBK team. We discuss the teaching material. Module for example. Therefore, we could deliver the correct teaching material to our students. We do this just informally. Usually at recess time. Mostly at break time."

Feeling as one/in the same team

One participant shared knowledge as he believed he was part of the team. He stated, "I share knowledge because I feel like we are one here. United. We are in one team...I share knowledge because first, we are in the same team here. In this institution."

Donation

Sharing knowledge was assumed as a donation which motivated Lecturer-Teaching 2 to share knowledge with his colleagues. He noted, "After I attended a PDP, I share the key points of PDP with my colleagues. Because I feel that I have something that we can donate to our colleagues."

Humanity

Lecturer-Teaching 2 considered sharing knowledge as part of humanity. He said, "...Third, my motivation is...humanity. Sharing knowledge is something positive."

Summary

Lecturer-Teaching participants at RS1 shared knowledge as they were motivated by completing each other, being acknowledged (recognition), the power of knowledge sharing, obligation, influencing people, unifying, getting feedback, delivering the correct teaching material, feeling as one/in the same team, donation, and humanity. Their motivations to share knowledge were intrinsic and extrinsic.

5.4. Within-Case Analysis Research Question 2

Generally, participants at RS1 shared knowledge because they were motivated by being acknowledged, obligation, responsibility, the power of knowledge sharing, and to get something in return as it is illustrated in Table 5.10. Only Lecturer unit participants did not mention they shared knowledge because they were motivated by by getting something in return (reciprocity). Lecturer-Unit participants and Lecturer-teaching participants were also motivated by unifying factors. Middle Managers and Lecturer-teaching participants agreed that getting support from the team also motivated them to share knowledge. Tangible rewards motivated Top Managers to share knowledge while equality, assurance, to feel “lighter”, culture, to create a conducive atmosphere, and to strengthen understanding were other motivations for Middle Managers to share knowledge. For Lecturer-Unit participants, to achieve an objective, equality, religious factors, and to maintain self-image, and share a positive aura motivated them to share knowledge as well. Meanwhile, completing each other, influencing people, delivering the correct teaching material, donation, and humanity influenced Lecturer-Teaching participants to share knowledge. The RS1’s participants’ motivations to share knowledge could be intrinsic, extrinsic, or both.

Table 5.10

Participants' Motivations to Share Knowledge at RS1

Motivation to share	Participants			
	Top Manager	Middle Manager	Lecturer-Unit	Lecturer-Teaching
Relationship with recipients	√			
Being acknowledged/recognition	√	√	√	√
The power of knowledge sharing	√	√	√	√
To get something in return	√	√		√
Obligation	√	√	√	√
Responsibility	√	√	√	
Tangible rewards	√			
Perceived power to knowledge	√			
Assurance		√		
Equality		√	√	
To feel "lighter"		√		
Culture		√		
To create conducive atmosphere		√		
To strengthen understanding		√		
To get support		√		
To share positive aura			√	
Unifying			√	√
To achieve the objectives			√	
Religious factor			√	
Completing each other				√
Delivering the correct teaching material				√
Feeling as one/in the same team				√
Donation				√
Humanity				√
Influencing people				√

Chapter Summary

The within case analysis shows that the knowledge shared by participants across four groups mainly related to their obligation as lecturers in Indonesia which is the application of *Tridharma*. The knowledge they shared included teaching material, research methods, and knowledge related to community service. Meanwhile, participants at management groups, the managers shared information related to their responsibility as managers such as distributed policies and regulations. Other knowledge which shared by participants at RS1 namely: expertise, the Unit's service, current affair, students' issues, and classroom

management (see Appendix J.1 for detailed information on what knowledge is shared). Participants at RS1 shared tacit and explicit knowledge (see Appendix K.1). Most knowledge shared, however, is tacit knowledge because the knowledge was created at RS1 mainly through socialisation (see Appendix L.1). The approach used to share knowledge depended on what knowledge was shared and the effectiveness of the knowledge to be shared. For example, when sharing knowledge related to their obligation as lecturers, they used formal meeting. Meanwhile, the favoured methods for sharing knowledge was face-to-face interaction.

The within case analysis showed that the participants at RS1 shared knowledge as they were influenced by intrinsic and extrinsic motivations. They shares knowledge because the participants were motivated by being acknowledged, obligation, responsibility, the power of knowledge sharing, and to get something in return. Other motivations were to unify ideas, tangible rewards, being equal, to feel 'lighter', and to strengthen the understanding on the knowledge (see Appendix M.1).

The following chapter presents the research findings from Research Site 2. Similar to the presentation of research site 1, the presentation will include the within-case analysis of what knowledge shared, types of knowledge share, approach to share knowledge, how knowledge is created, and are the participants' motivations o share knowledge.

CHAPTER SIX : HOW DOES KNOWLEDGE SHARING OCCUR AT RESEARCH SITE 2?

Preceding chapter presents the findings of what knowledge is shared and what motivates participants at Research Site 1 to share knowledge. This Chapter 6 presents what knowledge is shared and what motivates participants at Research Site 2 to share knowledge. The four sections of chapter 6 are: Section 6.1 - Knowledge shared by Top Managers, Middle Managers, Lecturers who are active in a Unit (Lecturer-Unit¹ participants), and Lecturers who do not hold any structural position and are not active in a unit (Lecturer-Teaching participants); Section 6.2 - within case analysis for RQ1; Section 6.3 - What motivates the participants to share knowledge follows; and Section 6.4 - within case analysis for RQ2.

Research Site 2 is in a province in Kalimantan Island and strongly influenced by Malay culture. Most people in this province are Muslims even though they come from ethnic Malay, Dayak, Tionghoa, Java, and other different ethnicities. The city is, dominated by Malay culture which in turn is influenced by Islamic culture. Thus, RS2 is strongly and undoubtedly influenced by Islam. As a state organisation in Indonesia, RS2 is bureaucratic with over 300 staff of lecturers and administrators.

Top Managers at RS2 in this presentation are lecturers who also hold high level structural positions such as Director or Director's Assistant. Middle Managers are the lecturers who lead a unit or hold positions in management in a department and in RS2 they are the Heads of Professional Units and the Vice Heads of the Technical Department. Lecturers-Unit participants are lecturers who are also part of a unit and they include Lecturers-Unit 1, Lecturers-Unit 2, and Lecturers-Unit 3. Finally, Lecturers-Teaching participants are Lecturer-Teaching 1 and Lecturer-Teaching 2. Section 6.1 is divided into four subsections which describe the knowledge shared by Top Managers, Middle Managers, and Lecturers who are active in the Unit, and Lecturers who do not hold structural positions. Each subsection of Section 6.1 also demonstrates the types of knowledge shared which can be tacit or explicit, how knowledge is created which can be through the SECI (Socialisation, Externalisation, Combination, and Internalisation) process and the approach applied during the knowledge sharing such as through formal or informal

¹ A unit in a State Polytechnic is a section or subdivision in the organisation which provides certain services for internal members in the organisation or for the community outside the institution.

mechanisms. Section 6.2 is the within case analysis which explores the similarities and differences of knowledge shared by each group of participants, types of knowledge shared, how the knowledge is created, and the approach used by each group of participants in RS2.

Section 6.3 explains what participants reported as motivating them to share knowledge. The last subsection is within case analysis which presents the data in relation to RQ 2: the motivation of the participants to share their knowledge.

6.1. What Knowledge is Shared at RS2

The presentation in this subdivision begins with the presentation of what knowledge is shared by Top Managers, and the Assistant Director for Academic Affairs who is also a lecturer at one of the technical departments at RS2).

6.1.1. Knowledge Shared by Top Managers

This subsection presents what knowledge is shared by Top Managers in the areas of Professional Development Programs, management, feedback, suggestions, tips, documents (to DIKTI), files to DPR, policy, religious beliefs and classroom management.

The Director explained that he shared knowledge with other Top and Middle Managers gained by attending professional development programs as well as sharing administrative information as required by their positions in management. The Assistant Director for Academic Affairs/First Assistant Director reported he shared knowledge related to fulfilling the two areas of *Tridharma* factors or three dedications (teaching material and research).

The Director also shared knowledge with administrative staff and lecturers relating to management and government but did not specify what. He also gave feedback and suggestions to them as well as recommendations to government, especially the Director. Both Top Managers shared policies with members in the institution but did not specify what. The First Director's Assistant regularly discussed or shared knowledge on religion and religious issues with the director, usually after work hours. He also shared administrative issues related to his position as the First Assistant Director and, related to his position as a member of the department, he shared knowledge about classroom management with colleagues in the department. The knowledge shared by the Top Managers at RS2 is described in Table 6.1 which compares the knowledge sharing of the two.

Table 6.1

The Knowledge Shared by Top Managers at Research Site 2

Director		First Director's Assistant	
Area of knowledge shared	What knowledge shared	Area of knowledge shared	What knowledge shared
Professional Development Programs	PDP material	<i>Tridharma</i>	Research (proposal review, research results review)
	PDP reports	PDP	PDP reports
	PDP summary/key points		PDP material/results/discussion
Management	Weakness evaluation		Experiences
Feedback/suggestions		Tips/recommendations/suggestions	
Sharing documents (such as application forms) to DIKTI		Policy	
Files to DPR		Management	Sub-management evaluation
Policy			Corrective issues, introspective, internal management corrective action
		Religious beliefs	
		Classroom management	

As lecturers, Top Managers also shared reports with the institution after attending a PDP as explained by the First Director's Assistant, "It is in our official duty-letter, we are obligated to submit a report after attending a training, in written form. A hardcopy report. It is at the institution level." He continued, "but like this, after training I make a report. That is official. Procedural". Top Managers also shared PDP material and key points. The First Director's Assistant shared experiences after attending a PDP. The sharing of this information was usually in an informal discussion since there is no obligation or policy to share.

The Director stated that he shared documents to DIKTI or DPR as Top Managers dealt with the government. He explained that it was part of their responsibilities to provide information or documents with the government. The Director explained,

After informal discussion or emails, we just send one of us to meet the members of DPR... We (Director) were involved to share our point of view...I share knowledge with DIKTI as well...It is sometimes from DIKTI, we have to

fill some forms, then we share it with DIKTI. Formally. It can be hard copy and soft copy.

Top Managers, influenced by their structural position shared knowledge on management, policy, and provided data or files to the government. The First Director's Assistant recounted, "I usually share knowledge related to my job description... I share information about policies... the topic can be about management."

Table 6.1 shows that one Top Manager shared knowledge related to *Tridharma*. The sharing of *Tridharma* included the sharing of teaching material and research as indicated earlier (page 70). The First Director's Assistant, reported that he shared teaching materials and information on research on the RS2 website. He stated that he gave feedback on research proposals which he acknowledged was also part of his responsibility to ensure that other lecturers fulfil their *Tridharma*. He recalled, "I usually share knowledge related to my job description as the First Director's Assistant. That is the application of high educational institution *Tridharma*... for example, related to teaching, I share information about policies."

Knowledge related to the evaluation of weaknesses, sub-management evaluation, corrective issues, self-introspection and internal management, and corrective action is also shared by Top Managers. According to the First Director's Assistant he often had informal discussions about management [such as about staff evaluation] with the Director in order to prevent embarrassment of either the directors or the sub-ordinates.

The First Director's Assistant, who is responsible for guiding the implementation of *Tridharma* by other members in the organisation, recounted that he often provides feedback, suggestions, or recommendations to others. He said, "I also share things related to how to increase the enthusiasm for dedication to the community sector. I talk to staff here, they need to be motivated to do things for the community." As one of the lecturers in Mechanical Engineering, he claimed that he felt he should share recommendations or classroom management. He added,

We should share what we have learnt with other friends... Normally we give recommendations to do something to improve our department...as a lecturer, I share knowledge with my friends, in the department, or the head of department... about how to improve teaching process in classroom.

One of the Top Managers shared knowledge related to religious beliefs. The First Director's Assistant explained, "Normally it is about...well, we remind each

other that we have to be '*amanah*'²." He also stated that he shared information regarding administrative issues as part of his responsibility as a lecturer.

Formal and Informal Approaches

This section presents the approach applied during the knowledge sharing process which can be formal or informal. A formal meeting is a scheduled regular or incidental meeting held at the institution. An informal meeting is the opposite: unscheduled; held in any location; and not necessarily through face-to-face interaction but through other means such as email.

The data showed the approach chosen depended upon what knowledge was shared, what level or where the knowledge sharing took place, who the recipients were and the perceived effectiveness of the approach. The findings showed that the participants had similarities and differences when determining which mechanism to apply.

Top Managers used formal and informal approaches to knowledge share or an informal approach followed by a formal one. Before having a formal discussion with heads of departments regarding the key points of a training program for example, Top Managers discussed those points with colleagues informally. The Director said,

I share knowledge with colleagues in polytechnic: the summary of the training usually. For example, maybe the planning, organising, accounting, and controlling concepts have to be applied in (this institution). We discussed that. Then I gathered the heads of departments, planning unit, and others, to evaluate our weaknesses.

He added, "Well, perhaps I can say, there are three models actually. First, just informal discussion, then we share emails, finally we bring the discussion to a formal meeting." He also mentioned that formal and informal approaches complete each other. He said, "Informal is the follow up from the formal one. When we cannot finish our discussion in a formal meeting, then, outside the meeting, we discuss the topic."

What determined the approach used was based on what knowledge was shared, where or at what level the meeting was, and who the participants or the recipients were. For example, the First Director's Assistant shared knowledge

² *Amanah* comes from is an Arabic word which means honesty (al-*amanah*). According to Samsudin and Islam (2015), *Amanah* is the main requirement to be successful in the world and on the Day of Judgment. *Amanah* prevents corruption, violence, and anti-social activities for one's own wellbeing and leading to others in performing it. Husni (2012) mentions that being *amanah* is one of the requirements to being a good leader.

related to his job description formally. As First Director's Assistant, his job included ensuring the implementation of *Tridharma*, and sharing policy with sub-ordinates and management. He was also one of the reviewers for research proposals in RS2. He gave formal feedback to other colleagues' research proposals. He recounted,

I usually share knowledge related to my job description as First Assistant Director., that is, the application of high educational institution *Tridharma*, related to conducting research and dedication to community. For example, related to teaching, I share information about policies. For example, there is a new regulation from DIKTI regarding the new rule that a lecturer must produce her own teaching module or material. I share the information in a formal meeting, in a general meeting or in departmental meeting. I also share my policy here...also about policy regarding research, because there are different grant foundations for research. For example, research funded by DIKTI. I also submit the review of a research proposal.

The formal approach was also used when the recipients were government officers or the directors of other SPs in Indonesia or when the meetings or training were at a national level. The Director often had to discuss topics or send documents to DIKTI or to the House of Representatives formally. He also gave recommendations to the government. He explained, "Look, as a director, the formal or informal discussion is actually about 'a lot of people's lives'. All of the policies from the central government involved us, the directors' point of view, as their consideration".

Face-to-face discussions with the government were usually in formal meetings. The Director also sent documents formally to DIKTI. The Director recalled, "We do share documents formally. It is sometimes from DIKTI, we have to fill some forms, then we share it to DIKTI. Formally." However, in an urgent situation, the informal approach was used such as sending a document to DPR through email. He explained that, "If it is urgent, we use soft copy. For example, I urgently had to share file about engineering decree to DPR."

The Director also attended regular meetings at the national level in the State Polytechnic's Directors' Forum. This is a formal forum where ideas were shared regarding new issues or their institution's development. He explained, "I meet regularly with other polytechnic's directors. We meet regularly at the Directors' Forum. We discuss things like SKS, haven't finished yet. ...But we share our ideas there."

Besides using the formal approach, both Top Managers shared knowledge using an informal approach as well. Informally, they shared knowledge on PDP key points, PDP experience, management, giving feedback or recommendations, religious topics, and classroom management. The use of the informal approach was

mostly referred to as a tradition 'kongkow' or how to prevent embarrassment [save one's face]. The First Director's Assistant said that, "The informal one, well, we actually call it 'kongkow'. No schedule for that. When we meet, for example at break time, no teaching schedule, then we start chatting. It can turn into a serious discussion."

The use of either a formal or informal approach was also based on its effectiveness and encouragement of further sharing. The function of the formal approach was to formalise important topics during an informal discussion. Alternatively, the function of the informal approach completed the formal approach and overcame its limitations. According to the First Director's Assistant, even though he gained a great deal of knowledge in a formal discussion, he believed that the informal approach was more effective because it was a two-way discussion in which all participants join. He recalled,

I get a lot of knowledge actually through the formal way, such as formal meetings. First Assistant Director meetings...however, the informal way, well, we actually call it 'kongkow'. No schedule for that. When we meet for example at break time, no teaching schedule, then we start chatting. It can turn into a serious discussion.

The First Director's Assistant at RS2 believed that the informal approach was useful for sharing sensitive topics as it might only be between two participants. Sensitive topics could be about sub-ordinates, evaluation, or religion. He explained, "Certain topics are better discussed informally. Corrective issues, introspective or internal management corrective action." Religious topics which might lead to self-introspection were seen as sensitive as well, as they were also personal. The First Director's Assistant recalled that,

Well, like with our Director. It is often from the evening until 'maghrib'. Normally is it about...well, we remind each other, that we have '*amanah*'...it is more about religious discussion. Not expertise knowledge...it is knowledge about religion. So with the Director, we talk about the meaning of life, second, it is about our willingness to work for this institution. Sometime we both evaluate the sub-management. So the topic can be about management...it sometimes ends up with our consciousness. Introspection. Self-examination...this way of sharing is very effective. Because this kind of sharing will not happen in a formal discussion. This is a talk from heart to heart. I give feedback to the director and so does he. If it is informal, people will think that I am teaching the boss...but in an informal meeting, there is equality. So the message is transferred effectively. In a formal meeting, it is limited because there are things that constrain me from being "higher" than the director.

Here, an informal approach was believed to prevent embarrassment particularly of the person higher in the hierarchy. This approach was also effective for sharing knowledge as it could encourage the participants to engage in the

discussion. The First Director's Assistant recalled, "Informal discussion is more effective. For example, when we are gathering, suddenly we end up with discussions, for example explaining about our last trainings. We are triggered to share. Others share with me like that too."

According to the Director, even though in informal discussions he felt free to share and the discussion was more comprehensive, he preferred not separating the formal and informal approaches but having an integrated approach to sharing knowledge in support of each other. He said that,

Both formal and informal are effective for sharing. In informal we are free...but, what I mean is, we cannot separate formal and informal actually. They are connected essentially. Informal is the follow up from the formal one. When we cannot finish our discussion in a formal meeting, then, outside the meeting, we discuss the topic. I think it is good. Because we cannot talk about one topic thoroughly in a formal meeting. So, the more comprehensive discussion will be in an informal discussion... A formal meeting may take about 2-3 hours. Informal discussions can be at dinner, and may not have time limit.

The First Director's Assistant referred to the time limitations of a formal meeting. He also added that even though both were important, informal discussions were actually effective. In addition to the time limitation of a formal meeting, he did not have much opportunity to share knowledge even though he gained much knowledge. He said,

Both formal and informal are effective for sharing. In informal we are free, in formal we are limited by time...In a formal discussion, we do not really have time to share because there are many participants. We listen more here. For example, in a meeting with a Minister I get a lot of knowledge there... [but] in an informal discussion, I can share more. What happens is sometimes, what we had discussed in a formal meeting, we discussed it further informally.

Summary

Top Managers at RS2 shared knowledge in the areas of Professional Development Programs, management, giving feedback/suggestions tips/recommendations/suggestions, sharing documents (such as application forms) to DIKTI, files to DPR, policy, *Tridharma*, religious beliefs, and classroom management. In the area of PDPs they shared the material, reports, experiences, or the key points of PDP while in the area of *Tridharma* they shared research methods. Regarding management, they shared knowledge related to the weaknesses of their institution, sub-management evaluations, and corrective issues, introspections, internal management and corrective action.

Types of knowledge shared by Top Managers could be both tacit and explicit knowledge and both individual and collective. For tacit knowledge, they shared

both individual and collective semantic and episodic knowledge. For explicit knowledge, they shared semantic, declarative, and episodic types of individual knowledge while for collective explicit knowledge they shared semantic, episodic and periodic knowledge.

The knowledge created by Top Managers in knowledge sharing was through socialisation, externalisation, combination, and internalisation and was mainly created through socialisation.

For the approach used in sharing knowledge, both Top Managers employed formal and informal approaches and decisions were based on what knowledge was shared, where or at what level the meeting was, and who the participants or the recipients were. The choice of a formal or informal approach during knowledge sharing also depended on the effectiveness of the approach to share the knowledge and how it could encourage further sharing. Both Top Managers agreed that an informal approach could be more effective but that formal meetings were still needed.

6.1.2. Knowledge Shared by Middle Managers

This sub-division presents the data on what knowledge is shared by Middle Management at RS2. Management here comprises the Head of the Professional Unit and the Vice Head of the Technical Department. The Head of the Professional Unit leads a unit which provides services to the community such as assisting in developing entrepreneurs including how to: be an entrepreneur; manage a business; and market a product. This unit also produces its own mineral water. The Vice Head of the Technical Department is one of the Middle Managers at a department level besides the Head of Department.

Both Middle Managers at Research Site 2 shared knowledge related to *Tridharma* such as sharing teaching materials and knowledge with the community. Middle Managers shared knowledge related to PDPs such as submitting a PDP report or sharing and discussing key points of PDPs with colleagues. They also shared their expertise with colleagues and shared knowledge in the areas of policy, reports, management, student issues and problems, the unit's service, administrative affairs, and teaching techniques.

The Head of the Professional Unit shared knowledge related to his position not only with colleagues in the institution but also with the community. He shared the unit's services which might include the marketing or sharing of experience or products with the community, training members in the institution or community

about entrepreneurship, or showing the other lecturers or trainers about how to use the teaching materials on entrepreneurship. Meanwhile, the Vice Head of the Technical Department shared knowledge related to the teaching and learning process in his department such as student issues and problems and administrative affairs. The findings for knowledge shared by Middle Managers at RS2 are presented in Table 6.2 below.

Table 6.2

Knowledge Shared by Middle Managers at RS2

The Head of the Entrepreneurship Unit		The Vice Head of the Mechanical Engineering Department	
Types of knowledge shared	What knowledge is shared	Types of knowledge shared	What knowledge is shared
<i>Tridharma</i>	Teaching material	<i>Tridharma</i>	Teaching material
	Dedication to community	PDP	PDP information
PDP	PDP reports		PDP reports
	PDP key points discussion		PDP results discussion
Policy		Report	
Management		Management	
		Expertise	
Expertise		Student issues and problems	
Unit's service	Business affairs	Administrative affairs	
	Products		
	Information about products		
Teaching techniques			

Table 6.2 demonstrates that Middle Managers at RS2 shared knowledge related to *Tridharma* such as sharing teaching materials and sharing knowledge with the community. The Head of the Professional Unit recounted, "As a lecturer, I share about how to utilise IT, for example, how to utilise internet, formally and informally."

Sharing knowledge with the community was also what Middle Managers shared. The Head of the Professional Unit trained other colleagues to operate machines so they could train the community to do the same. He explained, "I share knowledge in the business field as well. It is part of dedication to society. (RS2) produces mineral water: (RS2) aqua. It utilised machines and needs staff to operate the machines. I trained staff to operate them." The Head of the Professional Unit

also shared knowledge within management not only as a lecturer but also as the Head of the Professional Unit. He added,

But I also share how to share entrepreneurship. Maybe about the body language, how to deliver the teaching materials, in formal meetings. I share the knowledge not only in RS2 but also in Padang, Ketapang. For module sharing, I sharing how to use the module, how to play the business game, like a role-play. That is because I am the Head of Professional Unit and as master trainer.

Middle Managers shared knowledge regarding PDPs. They submitted PDP reports from the PDPs they attended were similar to comments made by MM3 (page 81). The Vice Head of the Technical Department noted,

I gave a report to the Head of Department. I explained what the training was about to him...the report to the Head of Department is in document form, hardcopy where I put the information about what the training was about and the material I got during the training...the report is in my department now, whoever needs it, they can read it.

They also shared the results or key points they got from PDPs as they are presented in Table 6.4. The sharing was usually in an informal or formal discussion in the departments or units. The Vice Head of the Technical Department recalled, "I share the training result too. Directly. In a meeting." He also shared PDP results with Top Managers in an informal discussion. They shared knowledge about teaching techniques and student issues and problems. For The Head of the Professional Unit, as with the Head of a Unit at RS2, teaching techniques on how to teach entrepreneurship to students were assumed to be his responsibility. He recounted, "For module sharing, I am sharing how to use the module, how to play the business game, like a role play. That is because I am the Head of Entrepreneurship unit and as master of trainer."

Middle Managers shared knowledge in the area of management, policy, and regulation, reports, unit services, and administrative affairs. With regard to management, they shared their ideas with colleagues informally. The Vice Head of the Technical Department stated, "We normally discuss organisation or management. And we usually do the discussion in informal meetings."

As one of the Middle Managers, policy (that comes from Top Managers) was circulated to subordinates. The Head of the Professional Unit explained, "For example, the legalisation procedure: I gathered my friends, they can ask about legalisation. For example, for BA2 development."

The Head of the Professional Unit shared knowledge in the form of sharing the service from the unit he leads, while the Vice Head of the Technical Department shared knowledge related to any activity in the department by reporting either

formally (in the form of hard copy) or conducting an informal discussion with Top Managers. He said, "With Top Managers, usually it is about reporting. A report. The activities which were conducted. Sometimes just chatting."

As lecturers, Middle Managers had diverse background knowledge and expertise. The Head of the Professional Unit and the Vice Head of the Technical Department shared their expertise. The Head of the Entrepreneurship Unit explained,

As a lecturer, I share about how to utilise IT, for example how to utilise the internet, formally and informally. Look, we cannot avoid the advance of IT. By sharing to others, we can improve each other's performance and this institution. In the end, we can give prime service. And from my religion's view, we share our knowledge as a good deed.

Formal and Informal Approaches

This subsection describes what approach or mechanism Middle Managers deployed in the knowledge sharing process. The approaches used during knowledge sharing can be formal, informal, or both. In this section, the data also describes the reasons for using certain approaches which might depend on what knowledge was shared, why, and where the knowledge sharing took place. The effectiveness of the approach to share the knowledge seemed to influence the choice of the approach. The findings in this part also demonstrate that the participants might have similar or different ideas related to which mechanism should be applied. The data shows that the formal approach might be followed by an informal approach such as the sharing of policy.

Knowledge regarding *Tridharma*, was shared through formal mechanisms such as during formal teaching-learning processes in the classroom or in a formal meeting such as at training on entrepreneurship. The Head of the Professional Unit said,

For teaching, I teach some subjects...they are formal meetings...I share knowledge in business field as well. It is part of dedication to society. (RS2) produces mineral water. (RS2) aqua. It utilises machines and need staff to operate the machines. I trained staff to operate them. From management part, I am the operational manager. I share knowledge with them about how to market the products and so on. I share them the cash flow management. We discuss or share things formally to keep the sustainability and accountability of the business.

Submitting a PDP report to Top Managers was also one of the Middle Managers' obligations as lecturers, which was conducted formally. The discussion of the PDP results and sharing information about upcoming events are shared through informal mechanisms as there was no obligation to share knowledge about

PDP key points and any information about PDP events. However, the sharing of the key points might also be conducted formally when the PDP was funded by a formal institution or when the Middle Managers shared it in a formal discussion as one of the discussion topics. The Head of the Professional Unit recounted, "The entrepreneurship training was from Nuffic, Netherlands, and they set this rule, sharing. We must share with our colleagues in (RS2) as soon as we get back from the training. TOT (Training of Trainers)." He also described the informal sharing of the key points from the PDP he had attended. He said,

If I attend seminars or workshops, after completing the programs, I will gather my friends, share the knowledge. I do it in the informal way. For example, the legalisation procedure. I gathered my friends, they can ask about legalisation. For example, for BA2 development.

The Vice Head of the Technical Department also shared knowledge related to PDPs formally and informally. He stated,

Because we were selected by the Head of Department, after attending the training, I gave a report to the Head of Department. I explained what the training was about to him...I share knowledge informally. Like when I shared plagiarism topic (PDP).

The sharing of knowledge about policy, the unit's service, teaching techniques, student issues and problems, and administrative affairs were more effective if they were shared in a formal situation such as during a meeting or training. The Head of the Professional Unit stated that, "I think...the formal discussion is more effective than the informal one.... More sharing takes place in formal discussion..." The formal mechanism was also used for reporting process to Top Managers. The Head of the Professional Unit recounted,

For entrepreneurship, I am a master trainer, so I share not only modules to the lecturers who teach entrepreneurship, but I also share how to share entrepreneurship. Maybe about the body language, how to deliver the teaching material. They are in formal meetings...But we also set the formal discussion. For example, about (RS2) aqua. But to be honest, I do more formal discussion with leaders. To Assistant Directors too. I share with them. More in a formal way.

Another area of knowledge related to management was shared informally. The choice of which approach to use was also based on effectiveness. The effectiveness of the approach in this data referred to the effectiveness of the approach to formalise the knowledge and to exchange knowledge. The data showed that at RS2, a formal approach was commonly used to formalise the application of dedication to the community (community service) which was part of *Tridharma*, such as through training which was discussed earlier. The sharing of knowledge

related to *Tridharma*, PDP reports, and reporting used formal approaches in the process of knowledge sharing. The participants of the training had to submit a report to demonstrate they had attended training.

The informal approach was deployed to share knowledge related to expertise and management. An informal approach was seen as an effective approach to share knowledge where the knowledge exchange was expected to happen. The informal approach was also viewed as an approach that takes place more frequently than a formal approach. The Vice Head of the Technical Department noted,

Besides, formal discussion is limited by time. We can have a long discussion in informal meeting. The topic can turn into a broader topic...For informal, we meet friends quite often. In department. We share knowledge. We exchange knowledge. So I not only receive knowledge, I also share knowledge...

The Head of the Professional Unit believed that the formal approach was more effective for sharing knowledge. However, he acknowledged that he felt more comfortable in an informal discussion where there was no limit, such as about the topic. He understood the topic better in an informal discussion. He said,

I think...the formal discussion is more effective than the informal one. I do more informal discussion but a formal one is more effective. More sharing takes place in formal discussion. But I feel comfortable in informal discussion...because in informal discussion, we can break the limits which appear during formal discussion... well...in informal discussion, we can talk about whatever we want to discuss. We do not need to watch our language, more relaxed. But in formal discussion, well...like, if we want to ask questions or give feedback, the time is so limited. Not flexible. In informal discussion I feel more comfortable, and we understand better about the topic discussed.

Meanwhile, according to the Vice Head of the Technical Department, the limitation of the frequency and duration of a formal meeting made it ineffective for sharing knowledge. He stated,

Informal one... because in informal discussions, we often meet face to face. Formal discussion is not too often and it is arranged beforehand. Besides, formal discussion is limited by time. ...So, we do informal discussions quite often. For example, when we are waiting for our time to teach, we usually get ourselves ready in the lecturers' room. So, we chat while waiting...and informal discussion is more comfortable. Whoever is interested, please...join in. It is more practical than setting a formal one where we have to ask for special time and place. We can easily just talk here and there.

The meetings regarding these findings reflect face-to-face interaction. The Head of the Professional Unit claimed that he expected that the members of the organisation would be more familiar with the use of IT to share knowledge. He considered face-to-face interaction was observed to be more effective as it made it easier to understand the knowledge shared, and the use of face-to-face interaction

was believed to be part of the humanism part of communication. Some topics are also better shared through face-to-face interaction. The Head of the Professional Unit recounted,

There are things that, well...we cannot ignore the use of IT, and we cannot ignore the humanism part. For example, if we fully move to use IT, we must communicate using CCTV for example...It is important, when we chat or communicate or interact with others, we see our counterpart. We know his condition. Therefore, we can understand better. We also know if our counterpart understands what we say...But for example, when we explain about a new policy for example, as Indonesians, we need, what we call as...hmm...convention. It is not going to work if we do not meet face to face.

The use of email to send information such as invitations to meetings was seen as less respectful, especially when the recipients were people with a higher rank. The Head of the Professional Unit explained that, "People want to feel respected. That is why, an invitation for meeting is on a piece of paper. More effective than an invitation sent through email." Even though the interaction through IT was time and cost efficient, the Vice Head of the Technical Department agreed that face-to-face interaction was an effective way to share knowledge because the recipients understand the knowledge better. He said,

If the objective is to understand the knowledge we share, receivers understand it too, face-to-face interaction is more effective because there will be feedback, additional information, and also knowledge exchange. If we use IT to share knowledge, the recipients only know the points. They do not know the details and no explanation or issues related to knowledge. It is hard to ask question or give feedback...well, the use of IT is just a matter of being efficient. Time and cost efficiency. However, sharing through IT, email for example, receivers may have problem to understand the new knowledge. And the language used in IT media does not support the understanding. There is no interaction in using IT for sharing knowledge. But if we use direct interaction, we have interaction with recipients, and moreover, the knowledge will be developed as the result of discussion.

Summary

The knowledge shared by Middle Managers at RS2 was in the area of knowledge *Tridharma*, PDPs, policy, management, expertise, Unit service, teaching technique, reports, student issues and problems, and administrative affairs. Regarding *Tridharma* the knowledge shared related to teaching material and dedication to the community, while the knowledge shared in the area of professional development programs was reports, key points of discussion, information, and PDP results discussion. In the area of knowledge of the Unit's service, Middle Managers shared knowledge related to business affairs and information about the product.

The types of knowledge shared by Middle Managers were both tacit and explicit. For tacit knowledge they shared individual semantic and episodic knowledge while for collective types of knowledge they shared semantic, declarative and episodic knowledge. For explicit knowledge Middle Managers shared individual knowledge which included semantic and episodic and for explicit collective knowledge they shared semantic, declarative, episodic and periodic knowledge.

The knowledge created by Middle Managers was through socialisation, externalisation, combination, and internalisation. The knowledge is mainly created through socialisation.

Both Middle Managers deployed formal and informal knowledge sharing approaches. They might also apply both formal and informal methods in one opportunity. Certain approaches were applied depending on what knowledge was shared, why, and where the knowledge sharing took place. The choice of the approach was also based on the effectiveness of the approach to formalise and exchange the knowledge. Middle Managers agreed that an informal approach was more effective because the knowledge was understood better during discussions and they felt more relaxed and comfortable in an informal situation. Middle Managers admitted the importance of IT in sharing knowledge but they agreed that face to face interaction was more effective for sharing knowledge.

6.1.3. Knowledge Shared by Lecturer-Unit Participants

This section describes the findings on what knowledge was shared by the Lecturer-Unit group at RS2. Members of Lecturer-Unit in this presentation are Lecturer-Unit 1, Lecturer-Unit 2, and Lecturer-Unit 3. The members of this Lecturer-Unit group come from different departments at RS2, therefore they have different background knowledge. The presentation is followed by what types of knowledge is shared, how the knowledge is created by the Lecturer-Unit group and what approach they use when they share knowledge.

The Lecturer-Unit group shared knowledge related to their duty as lecturers and members of a unit. They shared knowledge not only with colleagues in the institution, but also in the community. Being members of the unit, they had more opportunity to share within it. The knowledge they shared could be about the unit's services or issues and PDPs. However, knowledge related to expertise was not shared in the unit because the members have different background knowledge. Knowledge was related to *Tridharma*, expertise, learning techniques, classroom

management, student issues, and PDPs. They shared knowledge associated with their duty in the unit such as sharing budget proposals and unit data or the unit's service. In addition, sharing knowledge associated with their job and responsibilities, religious and social-politics knowledge is also shared. Table 6.3 presents findings of the knowledge shared by lecturers who are active in the unit.

Table 6.3

Knowledge Shared by Lecturer-Unit Participants at RS2

Lecturer	Unit 1	Lecturer	Unit 2	Lecturer	Unit 3
Area of knowledge shared	What knowledge shared	Area of knowledge shared	What knowledge shared	Area of knowledge shared	What knowledge shared
<i>Tridharma</i>	Teaching material	<i>Tridharma</i>	Teaching material	<i>Tridharma</i>	Teaching material
	Research report/research method		Research method/research funding information		Research method
PDP	PDP reports	PDP	PDP results/key points		Dedication to community
	PDP material/key points		PDP reports	PDPs	PDP information
Proposal			PDP material		PDP results
Religion		Learning techniques			PDP reports
Expertise/budget plan document		Classroom management			PDP material/key points
Unit data		Expertise		Student issues	
		Current affairs		Expertise	
		Softcopy through email		Unit documents/discussion	
		Unit vision		Link to website	

Table 6.3. shows that the members of the Lecturers-Unit group shared knowledge related to *Tridharma*, service to the unit, their expertise, their experience as lecturers, and other areas of knowledge related to social (current affair) or religious topics. Related to *Tridharma* members of the Lecturer-Unit group shared knowledge such as teaching materials, conducting research, and sharing knowledge with the community. They also shared knowledge related to the Professional Development Programs they attended. The sharing related to *Tridharma* is influenced by the application of *Tridharma* and their duty as lecturers. Lecturer-Unit 3 said, "Related to my duty as a lecturer, I share teaching material...which

supports our job as a lecturer.” Sharing knowledge associated with their teaching subject was only with those who teach similar subjects. Lecturer-Unit 1 recalled,

I usually share knowledge related to teaching. If friends ask of course, then I will share. For example, there is a friend who starts teaching similar topic as mine, so we shared the material. I shared the power point. Then we ended up in discussion because there were some points that she needed me to give some explanation. Well, just informally.

Lecturer-Unit 2 shared a similar idea. She mentioned, “I share with friends who teach a similar subject like mine.” Lecturer-Unit 3 added, “I share this teaching material with my colleagues who have similar expertise, because the teaching material will be useful if I share it with them.”

The members of the Lecturer-Unit group also shared knowledge related to conducting research such as data or budget plans, informally. Lecturer-Unit 1 recounted, “In the department, what we share is usually a research report.” Meanwhile, for the third part of *Tridharma* which was dedication to the community, they might involve other colleagues, as was done by Lecturer-Unit 3 when he planned or conducted English teaching for people in rural areas. He said, “Related to *Tridharma*, because we are lecturers, the third one that I do to share with the community, by involving others.”

Regarding PDPs, the Lecturer-Unit group shared the PDP reports, PDP results/key points, PDP material and PDP information. After attending a PDP, they must submit a report to formalise the activity as evidence of their attendance, especially as the Professional Development Programs were workplace funded. Lecturer-Unit 1 reported,

It is from a grant, we must submit a report as an evidence that we did attend the training...I submitted it to the department. The Head of the Department. And then, the department will submit the report to...the grant provider I think. To DIKTI perhaps...if it is self-funded, I did not need to make a report. The most important thing was I applied what I had gained in the training. To the students in the classroom for example.

The statement above indicated the need to share key points gained from the programs with students through the teaching-learning process in the classroom if the knowledge from the program was applicable to them. The knowledge was also shared with Top Managers at RS2. Lecturer-Unit 3 confirmed, “Like the other day. I attended a seminar about the World Bank. This organisation provides grants, a cooperation grant ...When I came back, I made a resume, shared it with my director here.” Lecturer-Unit 2 described the submission of her report after attending a PDP as an obligation. She said, “I submit the report to department, the Head of the Department, and the institution I mean to the finance department. Part of my

obligation.” As Lecturer-Unit 1’s indication of the need to share knowledge to students, Lecturer-Unit 2 added that she shared the key points or results from a PDP she had attended with colleagues. She explained, “For example, after attending a seminar funded by the UKB, we set a meeting to share the seminar result.” She shared the result with her colleagues in the unit as the result, funded by the unit itself was important for the members. The material from the PDP was also shared in the form of hardcopy or softcopy while the information was shared through email as also indicated by Lecturer-Unit 3.

The members of the Lecturers-Unit group at RS2 shared knowledge related to their unit’s service such as sharing proposals for certain activities and the unit’s data. For example, they shared Standard Operational Procedure (SOP). They did not share their expertise because in the unit, the members had different background knowledge. Therefore, besides sharing the unit’s services with colleagues outside the unit, the discussion among the members was around their work in the unit.

The expertise was shared among colleagues who had similar background knowledge, for instance among colleagues in a department. The Lecturer-Unit group also shared student issues in the department during meetings because they belonged to certain departments in the institution. The expertise was usually shared in an informal discussion since it was not easy to share their expertise in the form of data. Lecturer-Unit 1 stated, “Because in the department, we share our knowledge of expertise. So it is a bit difficult just to share through email. We teach different subjects.” Lecturer-Unit 3 did not share any expertise with management in the unit. The recipients’ interests were also taken into consideration. He said,

Hhmm...well...no, not really...I do not really share with management. Maybe because I think we have different background knowledge. So when I get knowledge related to English, I share it with my fellow English lecturers. Besides I do not think they are interested anyway.

As lecturers, they shared their experience with colleagues and other areas of knowledge related to social (current affairs) or religious topics. They also shared the experience of learning techniques and classroom management. Lecturers-Unit participants shared knowledge in the area of religion. Lecturer-Unit 1 shared this area of knowledge by lending books about religion to colleagues informally. They shared data as well. Social (current affairs) and political areas of knowledge were also shared by members of the Lecturers-Unit group informally through discussion.

Formal and Informal Approaches

The description of the approach used by the Lecturer-Unit participants at RS2 during the knowledge sharing process is demonstrated below. The data also describes the reasons for using an approach which depended on what knowledge is shared, and where or with whom, the knowledge is shared. The effectiveness of the approach used affects the selection of the approach. The data shows that the members of the Lecturer-Unit group might have similar or different ideas on the effectiveness of the approach deployed.

The findings above demonstrate that knowledge shared by the Lecturers-Unit group could be formal and informal. The findings also show that the lecturers who were active in a unit use the informal approach more than the formal one and they were less likely to create knowledge through internalisation.

The choice of approach by the members of the Lecturer-Unit group depended on what knowledge was shared, and where or with whom the knowledge was shared. They shared *Tridharma* knowledge such as teaching materials and teaching in the community, formally. They shared the knowledge with their students during the teaching-learning process in the classroom formally.

The members of the Lecturer-Unit group submitted a PDP report to the Director because the PDP was either workplace-funded or funded by a foundation grant. It is an obligation to submit a report after attending a PDP especially when the program was held outside RS2. Lecturer-Unit 1 said, "It is from a grant, so we must make a report as evidence that we attended the training...I made a report, and submitted to the department or SPJ (finance)...the report is about the schedule in trainings, the material." Lecturer-Unit 2 added, "I submit the report to department, the Head of the Department, and the institution. I mean to the finance department. Part of my obligation...the report is in hardcopy form." Lecturer-Unit 3 explained that a PDP report was needed when the program was held outside the institution. He said,

For our institution, we make a report. But it depends, I did not need to make a report for TOT training. Because the event is in the polytechnic. But when I attended the training in Sukabumi, as the place of training was in S... outside the polytechnic, we need to make a report about what we had been doing there, the material.

After attending a PDP, a seminar might be held to share the key points. Lecturer-Unit 2 confirmed that,

I share knowledge in a formal discussion in UKB, not in the department. In UKB we have formal discussions for sharing knowledge...for example, after

attending a seminar funded by the UKB, we set a meeting to share the seminar result.

The members of the group are also obliged to share knowledge related to student affairs such as student marks in a formal meeting in their departments.

Lecturer-Unit participants shared knowledge using the informal approach more than the formal approach in the areas of knowledge such as *Tridharma*, PDPs, religion, learning techniques, expertise, classroom management, unit data, social/political issues, and website links. Having shared knowledge formally in the areas of *Tridharma* and PDPs, the group shared knowledge informally as well. For example, when they shared modules, Power Points, books, and other materials. Lecturer-Unit 1 recounted,

For example, there is a friend who starts teaching a similar topic to mine, so we shared. Shared the material. I shared the power point. Then we ended up in discussion because there were some points that she needed me to give some explanation. Well, just informally.

The group also became involved in informal discussions when sharing knowledge related to teaching materials. Teaching English for the community opened the opportunity for Lecturer-Unit 3 to have an informal discussion with his teaching team when designing the proposal to teach English to the community. Lecturer-Unit 3 recalled,

Related to *Tridharma*, because we are lecturers, the third one that I do to share to the community is by involving others. For example, I would like to manage a proposal related to teaching English in the rural area. I shared this idea with two other friends. So I involved them...when I share knowledge either related to teaching, research, or dedication to community, I do the discussion about these topics just informally, via the phone for example. We are busy. Have a tight schedule. We do not have much time to meet formally.

PDP materials and information were also shared informally when friends requested it. Participants shared informally knowledge related to their unit's data, website links, and proposals. They shared the data mostly through email or hardcopy. They used the informal approach to share knowledge related to current affairs, classroom management, and religion. Lecturer-Unit 2 recounted,

In UKB we do not discuss about our expertise. We talk about our work in the unit...in my department, we share hardcopies. But in UKB, the material is usually in softcopy form. So we share the softcopy...for example, the KKL design. Or, we share it through email...I lend the material. Anybody who is interested can borrow my material.

Lecturer-Unit 3 explained, "I share knowledge with my leaders too, quite often. For example, I am active in the UKB, the unit under the 4th Assistant Director.

I have a lot of discussions with her. We discuss a lot about conducting cooperation with overseas parties.”

The effectiveness of the approach underlines the choice of approach. Evidently a formal approach was noticed as effective for sharing knowledge. However, in the unit they belonged to, the members of the group used the informal approach to share knowledge. Lecturer-Unit 2 said, “I do not really have informal meetings in the department. In UKB I do, but not in the department.” Lecturer-Unit 3 described, “Because I am active outside the department, in the UKB, it means I have more opportunity to interact informally and share knowledge with other colleagues outside our department.”

The participants agreed that the formal approach was more effective for sharing knowledge. Lecturer-Unit 1 thought that in a formal meeting, she had the opportunity to share with more recipients. She agreed that from the recipients’ point of view, they would get more knowledge as well because in a formal meeting they were more focussed on receiving the knowledge. She said,

I think formal discussion is more effective. A formal meeting does not include only 2 persons. There would be more people in a formal meeting. So everybody will have opportunities to share. We complete each other. If I do not know something, others will explain the topic to me. In informal discussion, it may only include 2 persons...not that the informal one is not effective; it can be effective as well. It just that in formal discussion, we are more serious. Like in UKB. In informal discussion, we are not serious in discussing things. Because we are serious, we are focused during the meeting...I gain a lot in formal meetings. But I also have opportunities to share more. For example, if one of my friends come late for the meeting, I can share what I have gained.

Lecturer-Unit 2 indicated that the forced feeling when attending a formal meeting made the participants share knowledge with others, while in an informal discussion not all participants of the discussion wanted to share. She mentioned,

I think the formal one is more effective because in a formal meeting, we are forced to share. In informal discussion, some people like to share, some don’t...besides, in formal discussion, we have a discussion topic, a theme. We are forced to share the information related to topic discussed...actually, I share and receive a lot in formal meetings. In general, all of participants in that meeting will talk. So lots of knowledge circulated there to lots of people.

Lecturer-Unit 3 reported that a formal meeting with a focussed-topic discussion was more effective for sharing knowledge because he had more opportunity to share with many recipients. The opportunity to share in a formal meeting was actually the result of his activities or involvement in units even though he might not necessarily hold a certain structural position. Like Lecturer-Unit 1, he thought that the formal approach was effective because in a formal meeting the

participants were more focussed and many participants at the meeting had opportunities to share. He recounted,

I think the formal meeting is more effective...In formal discussion, we gain a lot because we are focused and many people share...If you hold one of the structural positions here or are active in a unit, it is more likely you will attend many formal meetings. The more you join formal meetings, the more you gain knowledge and your opportunity to share knowledge is also higher. If not part of the structure, the opportunity will be less...I gain a lot either knowledge or the opportunity to share. Formally and informally. Because I am active outside the department, in the UKB.

The informal approach, however, was seen as effective for sharing knowledge when the knowledge was new or the topic was discussed for the first time, as Lecturer-Unit 2 stated. She said, "If we share a topic for the first time, informal discussion is more effective. So we talk directly face-to-face to recipients. Maybe in a meeting, or in an informal opportunity." The effectiveness of the informal approach in knowledge sharing was understood because of its frequency. Lecturer-Unit 3 agreed that the informal approach was effective because it could be conducted at any time. He said, "Look, in informal discussion, we can do it anytime. And because the frequency of meetings is high, we also gain lots of knowledge too. Whenever we have new knowledge, we just share it informally."

The formal and informal approaches mentioned refer to face-to-face interaction. The members of the Lecturers-Unit group also actively shared knowledge through IT, such as email or USB because in the unit where they were active, they often shared data or documents as part of their unit's service. The use of IT was seen as effective for sharing the data or documents not only related to their unit's service but also their teaching-learning documents. Lecturer-Unit 1 said,

It is easier using IT. They will get the softcopy. If we do the direct interaction, in the end, they still ask for the softcopy...we can share the softcopy through email or USB...except for teaching material, we have the softcopy. Easy to share softcopy. We use USB or email...it has been years actually. Since about 2009-2010. We have used softcopy for teaching material storing.

Lecturer-Unit 3 supported this idea, "IT is very useful for sharing knowledge. It saves our time, especially when we are apart from recipients. Very effective and efficient if we share knowledge via email." Sharing knowledge through IT is easier, and faster. Lecturer-Unit 2 concluded, "IT makes the sharing easy. No paper needed as well. Moreover, we can share anytime and anywhere...it is about the speed and safety"

Besides being fast, safe and easy, sharing knowledge through IT such as email was also more flexible as it could be done anywhere. Lecturer-Unit 3 thought that it made IT important in supporting knowledge sharing. He explained,

IT is very important to facilitate sharing knowledge, ma'am. Because, as I said before, with IT, I can share files even though I do not meet the recipient face-to-face. No need to make an appointment, just send the file to recipients, they can download the files...Without IT, the knowledge sharing might be distracted. It can be. Maybe not as a hinder, but it will hold back the process.

Lecturer-Unit 2, however, admitted that the process needed more effort to ensure the data is read as not all colleagues read their email every day. This issue was seen as a weakness for using IT for sharing. Therefore, she needed to send notifications via SMS to inform them about the email she had sent,

When I send file to my friends, I just send SMS to them to inform them that I just sent a file to their emails. They should check their emails. I inform them...please use this, the attachment, to set the budget. First, to assure us that the file is received no matter where the recipients are. Second, not many paper files on our table anymore... except in my unit, we check emails regularly. Me myself. But others, the recipients, not sure if they check their emails...Besides, in Indonesia, not all people open their emails regularly.

Lecturer-Unit 3 also mentioned a similar issue about the delayed response resulting from sharing through email. For example, he said, "In email, we are not standing by to check our email all the time. Our recipients may check email the next day when they are at work. Hard to expect a fast response for feedback from our recipient." Despite its weaknesses, sharing knowledge through IT was viewed as effective as well.

Clearly, the findings showed that for the members of the Lecturer-Unit group at RS2 sharing knowledge through face-to-face interaction or discussion was more effective. Face-to-face interaction was effective because it facilitated understanding of the topic discussed, and enabled interaction between the giver and the recipients. Areas of knowledge such as expertise, were better understood if they were shared face-to-face and the topic which needed explanation, would be better shared through face-to-face. Lecturer-Unit 1 recalled,

But, I think...face to face interaction is more effective. We understand faster...because in the department, we share our knowledge of expertise. So it is a bit difficult just to share through email. We teach different subjects. Maybe just about budgeting I can share through email. In UKB, we share data mainly. So through email will be fine.

Lecturer-Unit 2 admitted that the best knowledge exchange occurred in face-to-face interaction. The feedback could be shared immediately and the recipients'

expression could be observed which was important in communication. She recounted,

Because in direct interaction, we communicate face-to-face. It is more effective...when we meet face-to-face with recipients, they, and me too, are obligated to listen. If the topic is interesting for us, we will keep excavating the knowledge by asking or giving feedback...Through email, we do not see the recipients' face...Well, it is different when we talk directly to receivers. When we do face-to-face interaction, our emotional is involved. We can see the recipient's reaction, expression, then we can also give feedback directly...

Lecturer-Unit 3 agreed that face-to-face discussion was more effective for a topic that needed to be explained or explored further. Fast feedback made face-to-face interaction more effective. He said,

But it will be different when we would like to share knowledge which needs explanation. Using IT would not be effective. It would be annoying as you have to type a lot to explain things. Face-to-face discussion would be the best choice...because the communication is better, intense, in face-to-face interaction. If we do not understand, we can ask directly, we can also give feedback.

Ultimately, Lecturers-Unit admitted that the effectiveness of IT or face-to-face interaction depended on what knowledge was shared. Lecture-unit 1 mentioned,

Hard to choose. Because they have different function. IT is like a transport. But for explaining a topic, we need direct interaction. We need discussion. Maybe for an easy topic, through email is fine. But for a complicated topic, we need to have a discussion.

Lecturer-Unit 3 added, "It depends on what is shared...If we share an information without needing further explanation, like the e-book I told you about, then we do not need to meet face-to-face. Just send the file through email."

Summary

The Lecturers-Unit at RS2 shared knowledge in the areas of *Tridharma*, PDPs, proposals, religion, expertise/budget plan documents, unit data/vision/documents, learning techniques, classroom management, current affairs, soft copies through email, student issues, and links to websites. The knowledge shared in *Tridharma* was teaching material, research methods, and dedication to the community while in Professional Development Programs, the knowledge shared was PDP reports, materials/key points, information, and results.

The Lecturer-Unit participants shared tacit and explicit types of knowledge either the individual knowledge or the collective knowledge. The tacit individual knowledge shared could be semantic, declarative, and episodic while the tacit

collective knowledge shared could be semantic and episodic knowledge. The explicit knowledge shared was both individual and collective knowledge. The explicit individual knowledge shared was semantic, declarative, and episodic knowledge while the explicit collective knowledge shared could be semantic and declarative knowledge.

The knowledge created was through socialisation, externalisation, combination, and internalisation. The knowledge was created mainly through socialisation.

Participants shared knowledge through formal and informal approaches. They used the informal approach more than the formal one. The choice of approach depended on what knowledge was shared, and where or with whom the knowledge was shared. The effectiveness of the approach was also a consideration when choosing the approach as well. Lecturers-Unit participants agreed that the formal approach was more effective for sharing knowledge but an informal approach was also viewed as effective when the knowledge was new or the topic was discussed for the first time and as the informal approach could be conducted at any time.

6.1.4. What Knowledge is Shared by Lecturer-Teaching Participants

This section describes the findings on what knowledge is shared by Lecturer-Teaching participants. The Lecturer-Teaching participants in this section are Lecturer-teaching 1 and 2. The presentation of the findings is followed by the presentation of data on types of knowledge shared, how knowledge is created by Middle Managers at RS2 and the approach used when they share knowledge.

Lecturer-Teaching participants shared knowledge with colleagues in departments and with the community when they shared knowledge related to the application of dedication to the community. Participants shared knowledge related to *Tridharma* such as teaching materials, research methods, and dedication to the community; and the key points from Professional Development Programs they attended. They shared their knowledge in relation to their duty as lecturers such as classroom management and teaching techniques. They also shared their expertise with other colleagues.

The knowledge shared by Lecturer-Teaching participants is described in Table 6.4. The table describes and compares the knowledge shared by the two Lecturers who do not hold certain structural positions and are not active in a unit at RS2.

Table 6.4

The Knowledge Shared by Lecturers-Teaching at RS2

Lecturer –Teaching 1		Lecturer-Teaching 2	
Area of knowledge shared	What knowledge shared	Area of knowledge shared	What knowledge shared
<i>Tridharma</i>	Teaching material	<i>Tridharma</i>	Teaching material
	Research methods		Research
	Dedication to community		Dedication to community
Classroom Management	Student behaviour	Professional Development Programs (PDP)	PDP key point
	Classroom conditions	Expertise	
Expertise			

Both participants share knowledge related to their obligation as lecturers in Indonesia, their expertise, and their daily issues as lecturers such as classroom management. They share knowledge in the area of *Tridharma* and PDPs as they must apply the application of both areas of knowledge.

Influenced by organisational goals and strategies, Lecturers-Teaching participants shared knowledge regarding, teaching material, research, and dedication to the community. They also shared modules or discussed teaching material with other lecturers who taught similar subjects as one subject might be taught by two lecturers and the students must receive similar teaching material. Therefore, they must collaborate with each other. Lecturer-Teaching1 said, “well...I share teaching material or job sheet. With a colleague who also teach similar subject I share job sheet. We are in the same team for teaching this subject.” The sharing of knowledge related to research, dedication to the community and entrepreneurship was conducted through informal discussion by both participants. During the application of the last requirement of *Tridharma*, discussion with colleagues happened regarding the program. Lecturer-Teaching 1 recalled, “I share about dedication to community informally. To my colleagues. Just a discussion about a plan to do activity for this point.” They also shared key points from a PDP they had attended informally. Their experiences as lecturers were also shared such as knowledge related to classroom management, sharing ideas about students’ behaviour and classroom conditions.

Formal and Informal Approach

The Lecture-Teaching participants at RS2 shared knowledge formally and informally. Only for the sharing related to dedication to the community did they employ formal mechanisms. The rest of the knowledge as was stated in table 6.12 was shared informally. The senior-junior relationship seemed to be one of the weaknesses of a formal meeting besides the time limit and low frequency. For Lecturer-Teaching 1, the choice of approach was mostly influenced by her confidence because she felt shy or worried sharing knowledge in a formal discussion or meeting since she felt that she was a junior and the rest were seniors. She did not want to say something wrong or humiliate the seniors. In a formal discussion, the seniors were said to talk more. She talked when she was asked to talk or give an opinion. Therefore, Lecturer-Teaching 1 claimed that informal discussion was more effective than formal discussion. Lecturer-Teaching 1 explained,

“I an informal meeting such as the meeting in department, the seniors that talk more. Not junior like me. I feel shy to talk. Besides, what I need to talk has been discussed sometimes. So what we do, we talk to the senior that sit next to us, then she will ask about that to the forum...I feel shy to talk or share in a formal meeting because I am not confidence. I am still new. I am worried if I said something wrong. If I said something wrong then everybody will look at me and feel funny...in a formal meeting such as in department I will talk mostly when they ask my opinion. I will share my ideas. But if they don't ask, I am likely be silent...a senior-junior status really affects my sharing of knowledge to other colleagues. I am worried if I say the wrong things. I am still new here. I feel a bit reluctant to share to seniors. I have only been teaching here for about 5 years now...I attended formal meeting in department. I do share a bit in a formal discussion. Not much. I don't talk a lot in a formal meeting. Unless if they ask me. Then I will talk. Share what I know or give feedback...I do the informal discussion usually in lecturer room. I share knowledge with colleagues in the institution where I work.”

She also admitted that in an informal meeting, she had more opportunity to talk or share knowledge. Moreover, the number of participants in a formal meeting discouraged her to talk more. In an informal meeting, the relaxed atmosphere created a conducive situation for them to talk as mentioned earlier by Lecturer-Teaching 2 at RS1 (page 95). She went on to say,

“I think informal discussion is more effective than the formal one because in a formal discussion, too many participants...I have more opportunity to share in an informal discussion. I think the informal discussion is more effective because I feel relaxed. In a formal discussion, we have to think a lot of aspect before we talk. I am worried if I insult or hurt other participants' feeling. In an informal one I feel free. A bit relaxed to give feedback.

In line with Lecturer-Teaching 1, Lecturer-Teaching 2 reported that an informal discussion was a more effective way to share knowledge as the frequency

of meetings was more than the formal ones, it could be carried out anywhere, and she felt more relaxed in an informal opportunity. She recounted,

“Informal discussion is more effective. Because the formal one is not very often. Not like informal. It can be anytime, anywhere such as while waiting for my teaching time. The frequency of meeting is higher than the formal one. Formal meeting in department is usually early and the end of semester such the evaluation meeting...informal discussion is relaxed. I feel more comfortable. Besides, the knowledge is shared bit by bit. Not like in formal meeting. The knowledge is a lot to be digested in one opportunity. I feel alright too during a formal meeting. But we have to consider time wise. Have to share time to talk with others. Limited time for formal meeting. A formal meeting has its own agenda...”

The informal meeting here was either through IT such as SMS or email, or through face-to-face interaction. Lecturer-Teaching 1 admitted that even though she shared documents either in hardcopy or softcopy, she did not use email to share it. She said,

“I share with other lecturers when they ask me to share. Sometimes we exchange the teaching material...I share because they ask me to. They ask me through SMS. Maybe because I am more experienced. Just an informal discussion...I share document to colleagues as well. Hardcopy and softcopy...I do not use email a lot.”

Lecturer-Teaching 2 shared knowledge through email to share teaching material with her colleagues. She stated, “I share teaching material or job sheet. With a colleague who also teach similar subject I share job sheet. We are in the same team for teaching this subject. I share the knowledge through email...I also share other teaching...”

Both Lecturer-Teaching 1 and 2 agreed that sharing knowledge through face-to-face interaction was more effective than sharing through IT. The quick response during face-to-face interaction and the fact that the discussion was understood better, influenced face-to-face interaction as a better way to share knowledge. Lecturer-Teaching 1 mentioned,

“I think face to face interaction is more effective because we can ask a lot of things during discussion. if it is through email, it is possible that people will misunderstand...when we use face-to-face interaction, we can get a quick response...”

Similar to Lecture-Teaching1, Lecturer-Teaching 2 claimed that face-to-face interaction was a two way interaction therefore the response was faster. Moreover, she said that face-to-face interaction was a real interaction. She reported, “I think face-to-face interaction is more effective than using IT. Face to face interaction is better because it is two-way discussion. The interaction is real. I can get the response straight away. With email, I have to wait the response...” Yet, she agreed that

sharing through email and face-to-face means makes the discussion more effective. She claimed, “But email is good too. What I do, after face-to-face discussion, I send the discussion material through email. I think it is even more effective when we use both ways.”

6.2. Within Case Analysis Research Question 1

Table 6.5

Knowledge Shared by Participants at RS2

Area of knowledge	What knowledge is shared	Participants			
		Top Managers	Middle Managers	Lecturer-Unit participants	Lecturer-Teaching participants
<i>Tridharma</i>	Teaching materials		√	√	√
	Research methods	√		√	√
	Dedication to community		√	√	√
PDPs	PDP Reports	√	√	√	
	Key points from PDPs	√	√	√	√
	PDP materials	√		√	
	Information about PDPs			√	
Management		√	√		
Feedback/recommendations related to job description		√			
Document/files to DIKI/government		√			
Policies		√	√		
Religious belief		√		√	
Classroom management		√		√	√
Expertise			√	√	√
Unit's service			√	√	
Teaching technique			√		
Reports [from an event or after a			√		

Area of knowledge	What knowledge is shared	Participants			
		Top Managers	Middle Managers	Lecturer-Unit participants	Lecturer-Teaching participants
program had been conducted]					
Student issues			√	√	
Administrative affairs			√		
Proposals				√	
Learning techniques				√	
Current affairs				√	
Softcopy-email				√	
Link to website				√	

The similarities and differences between what knowledge is shared by participants at RS2 are detailed in Table 6.5. Notably all participants shared knowledge related to the area of *Tridharma* and PDPs. Top Managers and Middle Managers also stated that they shared recommendations and feedback whilst the Top Manager was the only individual who, when interviewed, stated that he shared documents and files relating to DIKTI. Policy meanwhile was shared at Top Management and Middle Management levels. Religious knowledge was shared by Top Managers and Lecturers-Unit participants. Classroom management at this research site was discussed by Top Managers, Lecturer-Unit participants and Lecturer-Teaching participants, whilst unit services were discussed at Middle Management and Lecturer-Unit level. Teaching Techniques were solely discussed by Middle Managers along with reports and administration affairs. Student issues were dealt with by both Middle Managers and Lecturer-Unit participants. The table above illustrates Middle Managers and Lecturer-Unit participants shared more areas of knowledge than Top Managers and Lecturer-Teaching participants.

The table above also illustrates the differences between what knowledge was shared across participants at RS2. It can be seen that Top Managers did not share knowledge in the areas of unit services, teaching techniques, reports, student issues, administrative affairs, proposals, learning techniques, current affairs, softcopy emails and links to the organisational website. Similarly, Middle Managers stated that they did not share knowledge in many areas like compiling proposals, learning

techniques, current affairs, softcopy emails and links to the organisational website as well as feedback/recommendations, documents and files relating to DIKTI, religion and classroom management. Lecturer-Unit participants indicated at interview that they did not share feedback or recommendations with other colleagues, documents and files relating to DIKTI, knowledge on policy, teaching techniques, reports and administrative affairs. Lecturer-Teaching participants stood out as sharing less than the other participants.

Although all participants shared knowledge related to *Tridharma* and Professional Development Programs, only Lecturer-Unit participants shared all of the points of *Tridharma* whilst Middle Managers only shared knowledge related to teaching material and dedication to community. Meanwhile, relating to *Tridharma*, Top Managers only shared knowledge related to research methods. Key points of PDPs were shared by all participants, however only Lecturer-Teaching participants did not share reports from PDPs.

During the knowledge sharing process, participants applied both formal and informal approaches. Participant groups at RS2 had different ideas about their approaches as they depended on several factors: what knowledge was to be shared and how effective the approach was that was applied during knowledge sharing. Knowledge related to dedication to communities was usually shared formally as it was organised by the institution and there would be a decree for the participants to conduct the activities. Knowledge such as current affairs or religion was shared informally.

Other factors which influenced the choice of approach were, the location where the sharing took place, who the recipients were, and why the knowledge had to be shared. Top Managers, Middle Managers, and Lecturer-Unit participants at RS2 were influenced about the approach taken by the place where the sharing took place. For example, if the sharing happened at a national level such as at an Indonesian State Polytechnics' Directors Meeting, the sharing occurred in a formal discussion. Both Top Managers and Lecturer-Unit participants chose the approach for sharing knowledge based on who the recipients were. If the recipients had a higher rank, the sharing might take place in a formal discussion. However, only Middle Managers selected an approach that was determined by the reason the knowledge was shared.

Middle Managers and Lecturer-Unit participants at RS2 agreed that a formal approach was more effective than an informal approach. They also believed that in a formal discussion, they could do more sharing. Lecturer-Unit participants also

considered a formal discussion was more effective, as they believed that the recipients who received the knowledge would be greater in numbers and the participants in the formal meeting were more focused. Meanwhile, even though Middle Managers felt that the formal mechanism was better than the informal mechanism, they also expressed that they felt comfortable in informal meetings. Lecturer-Unit participants, on the other hand, felt that an informal meeting was an effective approach that could be applied because they shared knowledge at any time.

According to Top Managers and Lecturer-Teaching participants, an informal approach was the most effective approach to be applied. Top Managers also believed that culture influenced their preference. Yet, they suggested not to separate the formal and informal approach in so much that the informal approach was assumed to be the follow up approach after the formal approach. In the meantime, Lecturer-Teaching participants assumed that the 'distance relationship' between seniors and juniors made the informal approach a more effective approach to be deployed for sharing knowledge.

Top Managers, Middle Managers, Lecturer-Unit participants, and Lecturer-Teaching participants had similar thoughts, in that the use of either face-to-face interaction or IT communication depended on what type of knowledge was to be shared. Explicit knowledge was better shared through IT, because it was time and cost effective. This was stated by Middle Management participants and the effectiveness and efficiency were noticeable according to Top Management participants. Despite slow responses and the need for recipients to be informed when the knowledge senders sent email to the recipients, Lecturer-Unit participants in line with Top Manager and Middle Managers believed that, the use of IT for sharing knowledge would make the sharing happen faster, easier, and it could be done at any time.

Of particular note, all participants at RS2 decided that face-to-face interaction was more effective for sharing knowledge. The participant groups agreed that when the knowledge was shared through face-to-face interaction, the knowledge was often better understood. Middle Managers and Lecturer-Unit participants stated that knowledge exchange took place when the knowledge was shared through face-to-face interaction. Furthermore, Top Managers added another reason; they believed face-to-face interaction was more effective for sharing knowledge. The First Director's Assistant thought that people, 'senior in age' like him were sometimes not familiar with technology. Middle Managers at RS2 differed from the Top Managers'

opinion about sharing knowledge using IT with seniors (high rank personnel), as Middle Management believed that at RS2, sharing knowledge through IT would be viewed as less respectful.

6.3. What are the Participants’ Motivations to Share knowledge?

This section demonstrates what motivates participants to share knowledge. It is divided into four major subsections each of which describes four different groups of participants: Top Managers (Directors and the First Director’s Assistant), Middle Managers, Lecturer-Unit participants, and Lecturer-Teaching participants. Each subsection presents findings regarding the motivation to share, the intrinsic and extrinsic factors of motivation to share, and the summary of findings. Tables are also provided to support the description of the findings.

6.3.1. Top Managers

The findings showed that religious beliefs, being acknowledged, and the power of knowledge sharing motivated Top Managers to share knowledge. Other motivations to share were: responsibility, obligation, health, to make knowledge meaningful, the perceived power of knowledge, assurance, strengthening the topic discussed, and to get support.

Table 6.6

What Motivates Top Managers at RS2 to Share Knowledge

The Director	The First Director’s Assistant
Religious belief: want to be like prophet Mohammad	Religious belief: good deed (<i>amal jaryah</i>) ³
Being acknowledged	Being acknowledged
The power of knowledge sharing	The power of knowledge sharing
To assure he did the right things	Responsibility
Strengthening the topic discussed	Obligation
People’s agreement (the recipients agreed with what he said or agreed with his opinion)	Health
	To make knowledge meaningful
	Perceived power of knowledge

The Top Managers’ motivations to share were driven by religious beliefs to do good deeds (*amal jaryah*) as done by the Prophet Mohammad. Other motivations

³ Amal Jariyah means a good deed where its benefits and rewards (from God) are continuously pouring to those who do the deed (Luth, 2014).

were: being acknowledged and having the power of knowledge sharing. The First Director Assistant said, "...the objective (to share knowledge) is not money. But good deeds... It's worship. It comes from a religion perspective. Our religious doctrine." Being acknowledged was also a motivator for knowledge sharing. Influenced by his age, which required him to be a role model, the First Director's Assistant shared knowledge to show his power. He said, "If I never share knowledge with you, how would you know my power?" He also admitted that he needed to show others that he is knowledgeable. In addition to being acknowledged, both Top Managers agreed that by sharing knowledge, they would acquire more power. They stated that this was the power of knowledge sharing: it was a process to make one even more powerful because, according to the Director, when sharing knowledge, he gained more knowledge or his knowledge became stronger. This idea was inspired by a statement from a figure in Islam, Shaydina Ali, a warrior who was one of Prophet Mohammad's best friends.

The Director at RS2 mentioned that to assure he "did the right things", "strengthening the topic discussed", and people's agreements were his motivations to share. He explained he felt more confident if he knew what he did was correct and by sharing knowledge with others he said he would find out if he had acted correctly. He assumed his involvement in a discussion was important since his participation strengthened the topic discussed. The Director was proud if, in a discussion such as in a national-level meeting outside RS2, recipients agreed to his ideas. For him the agreement from others meant that people used his ideas as a reference, which implicitly made his name well-known in the RS2 context that he was leading. Moreover, by sharing knowledge with colleagues who were "in the same boat", he was confident the knowledge would be "developed".

Responsibility, obligation, health, to make knowledge meaningful, and the perceived power of knowledge as listed in Table 6.14 were the factors which motivated one member of the Top Management group to share knowledge. The First Director's Assistant felt responsibility to share knowledge. He stated that submitting a Professional Development Program report was part of his obligation as a lecturer in a Higher Educational Institution. The First Director's Assistant believed that sharing knowledge prevented him from "dementia". He also believed if he did not share knowledge with others, his knowledge "would be meaningless" [the knowledge would not be useful].

The following information expands on the findings on the motivations to share for Top Management at RS2. The quotations are provided to support the

findings. The presentation of detailed findings begins with knowledge sharing motivated by religious beliefs, followed by being acknowledged, the power of knowledge sharing, assurance, strengthening the topic discussed, 'people agreement', and then the area of knowledge responsibility, obligation, health, to make knowledge meaningful, and the perceived power of knowledge.

Religious beliefs

The Director was motivated by the Prophet Mohammad who shared his knowledge. This encouraged him to share knowledge with others as well. He explained, "I use the spiral theory. Or I use the Prophet Mohammad theory. So, when he gained the knowledge, he shared it with his closest friends". Meanwhile the First Director's Assistant was motivated to share knowledge as part of his religion's doctrines is to share knowledge (amal jariyah / good deed). Therefore, he explained he must have knowledge to do good deeds. He said,

Sharing knowledge with others is one of our religious doctrines. It is our 'amal jariyah'. We must have a lot of knowledge too, so that we can do our good deed. We can share knowledge. Whatever we do, we must have references. Share knowledge because the reference is our religion doctrine.

Being acknowledged

The Director said that he shared knowledge to show others that he knew something or had knowledge about the topic discussed. He claimed this would make him look smart. Moreover, he believed he would look proactive as he contributed to the discussion. He recounted,

The main reason I share is that we would like to share that we have a concept as well. Like this, like that. So we are not bad. We also have knowledge about the topic discussed. We look smart. Maybe because I feel useful. We feel useful in a discussion, being proactive, because we contribute to others.

The First Director's Assistant assumed that he needed to be a role model. He needed to motivate other people so that they would not lose their enthusiasm even though they were his seniors in age. Being appreciated by others, if only with a 'thank you', was important to him. The purpose of sharing knowledge was also to show others that he had knowledge. He mentioned,

I do not want our enthusiasm to decline because of our age. Even though we are getting older, we can still be a role model for the others...Well, I think...thank you is the reward, when people thank you. We are from the East, we need that thank you. People need to be appreciated for their hard work...How do you know I have knowledge unless I share it, I show it. I will look powerful because people know I have knowledge.

The power of knowledge sharing

The Director believed if he shared knowledge, it would make him stronger (more powerful) because he believed that sharing knowledge leads to further exploration to find answers to questions. So when he shares knowledge, a discussion will take place and further exploration of the knowledge happens. To this end his knowledge becomes more comprehensive and his knowledge becomes stronger. He becomes stronger as well. The Director reported,

When I share knowledge, I become stronger. According to the theory from Shaydina Ali, he said if we give money, the money will be gone. But not knowledge. Sharing knowledge is actually exploring. We explore. For example, you ask me a question, and I cannot answer it. When I get back home, I will try to find out the answer. I read books. Then I find the answer, I let you know. I share it with others, but maybe they do not agree. We have a discussion. We explore again. As a result, the knowledge becomes comprehensive. So, my knowledge becomes stronger.

Meanwhile, the First Director's Assistant believed that if he shared knowledge, he would get more knowledge. Having more knowledge was important for him because having more knowledge was about gaining respect and being privileged. More knowledge gave him more power. He recalled,

The more I share knowledge, the more knowledge I have. It means I will have more power. In the Qur'an, it is said that those who have knowledge, a lot of knowledge, are respected. Privileged. It is right that knowledge is power. It is different between those who possess knowledge and those who don't.

To assure he "did the right things"

The Director believed that sharing knowledge would help him to find out that what he did was correct. It was part of achieving his satisfaction as a scholar. He reported,

My motivation is personal satisfaction. Well, everybody wants to feel satisfied. But our satisfaction as scholars is not about wanting to be praised. But we want to know that what we do is correct for the sake of this nation.

Strengthening the topic discussed

In a formal meeting when a discussion took place, the Director reported that he shared his ideas and problems, and tried to get involved in discussions because he assumed that his involvement was important and would enrich the discussion. He also stated that his participation would advance his knowledge at the same time. The Director said,

So, it is about strengthening the topic discussed. Later on, the summary of the discussion will be rich. We do not like just sitting quietly, as if we do not

have problems...our involvement is very important so that our knowledge becomes rich. So that we have "reference" later.

People's agreement

The Director claimed he shared knowledge in order to gain support or to get people to agree with him as was noted in Table 6.14. He was proud if people agreed with him. He explained that being a director made him understand that whatever he does or says, people will relate it to his institution. His institution's reputation is in his hands. In his own institution, he shares knowledge in order to get support as well. He comprehends that his institution is like a boat and he hopes that the members are going in the same direction as he is. Top Management 1 explained,

Well, sometimes, it is like this. After I share my knowledge, others give comments, like: I agree with your opinion, or, well, Mr. X's idea is more relevant. In my heart, I feel very proud. I am proud because what we are doing here in (RS2) becomes a reference...If I get knowledge, knowledge can turn into a culture, I will immediately share it around with colleagues. Why? Because we are in the same boat. So we see more on the positive side of the idea. However, if I share with those who are not in the same boat, pessimistic ones, then it will not develop.

Responsibility

The First Director's Assistant assumed that his duty as the First Director's Assistant, made him responsible for sharing not only information related to conducting research, but also to the motivation for others to conduct research. He claimed, "It is my responsibility as the First Director's Assistant to share this information or motivation related to conducting research. In the end, this is for our students. Our students' quality depends on the lecturers."

Obligation

The First Director's Assistant believed that submitting a Professional Development Program report was an obligation. He stated, "It is in our official duty-letter we are obligated to make a written report after attending training. A hardcopy report. It is at institution level."

Health

The First Director's Assistant claimed that the activity of sharing knowledge would prevent him from dementia. He recounted, "Knowledge is not a material thing. The more we share, the more our brain will develop, and we will avoid dementia."

To make knowledge meaningful

The First Director's Assistant considered sharing knowledge as a strategy to make knowledge become meaningful. He also thought that knowledge would disappear if people did not share it. He recalled,

Knowledge is useful when it is transferred to others. For example, I know how to construct a curriculum. If I do not share with others, that knowledge will not have meaning. No application. If the knowledge stops with me, it is no use. If we do not share knowledge, the knowledge will disappear.

Perceived power of knowledge

The First Director's Assistant believed that knowledge would make one respected. He assumed that someone who possessed knowledge would be valued more than someone who was less knowledgeable. He argued, "In the Qur'an, it is said that those who have knowledge, a lot of knowledge, are respected. Privileged. It is right that knowledge is power. There is a difference between those who possess knowledge and those who don't."

Summary

This subsection described the RS2's Top Managers' motivations to share knowledge, which were: religious factors, being acknowledged, the power of knowledge sharing, responsibility, obligation, health, making the knowledge meaningful, assurance, strengthening the topic discussed, and getting support. These motivations were characterised as intrinsic and extrinsic. The intrinsic motivations were: to make the knowledge meaningful, "strengthening the topic discussed", to gain trust, to enrich knowledge, good deeds, sharing knowledge was part of religious doctrine, the need for more knowledge to do good deeds, following the prophet Mohammad, to check that what I did was correct, and sharing knowledge would develop my brain to avoid dementia. The extrinsic motivations were: responsibility as the First Assistant Director; obligated to make a report; as a role model; sharing knowledge with others would show my power; to look smart; being useful by giving my contribution; people agreed with my input; to share with those who had similar ideas to make me stronger. However, there were also motivations, which could be characterised as both intrinsic and extrinsic, such as sharing made me more powerful and more knowledge would be respected.

6.3.2. Middle Managers

This segment explains the findings on what motivates Middle Managers to share knowledge. The Middle Managers in this study were the Head of the

Professional Unit and the Vice Head of the Technical Department at RS2. Some factors that motivated both managers at RS2 to share knowledge were: obligation (as lecturer), religious beliefs, the power of knowledge sharing, getting support, and being acknowledged. The findings also showed further factors such as pay back (gratitude), tangible reward, relationship with recipients, to strengthen his knowledge (to get knowledge), and perceived power of knowledge.

Table 6.7

What Motivates Middle Managers at RS2 to Share Knowledge

The Head of Entrepreneurship Unit	Vice Head of Mechanical Engineering Department
Religious beliefs	Religious belief
The power of knowledge sharing	The power of knowledge sharing
Getting support	To finish the job well (to get support)
Being acknowledged	Being acknowledged
Paying back (gratitude)	Relationship with recipients
Tangible reward	Getting more (further) knowledge
Obligation	Responsibility
	Perceived power of knowledge

Religious beliefs motivated Middle Managers to share knowledge. The Head of the Professional Unit said, "We are obligated to share knowledge...Because of Him (God)." Meanwhile, the Vice Head of the Technical Department was convinced that by sharing knowledge, it was part of his way of showing *syukur* (thankfulness or gratitude to God) because by doing so he could help his colleagues to do a better job since the knowledge was not for him only. He reported, "The information is not only for us. We have to be thankful we can help others."

Both Middle Managers showed that their motivation to share knowledge was driven by their confidence that sharing would increase their knowledge and give them support. The Head of the Professional Unit mentioned that sharing knowledge gave him more power and enabled him to understand the knowledge better. The Vice Head of the Technical Department said that by sharing knowledge such as through collaborating, he could create a "better machine". Getting support also motivated the Head of the Professional Unit and the Vice Head of the Technical Department to share knowledge. The Head of the Professional Unit stated that if he shared knowledge, one day if he was in trouble, the colleagues who received the knowledge would be able to help him. The Vice Head of the Technical Department added that if he did not share knowledge, he would not be able to create a model

(machine). He recounted, "Hmmm...maybe because we have similar profession. Like in my department, mechanical engineering. We have our expertise about machinery. If we do not work together, we cannot make a model properly."

The need to be acknowledged motivated both Middle Managers at RS2 to share knowledge. The Head of the Professional Unit explained that if he had knowledge, he would be honoured and by sharing knowledge he would get more knowledge. He recalled, "If we use one of our religion's values, those who have knowledge will be lifted, honoured. That is the core." The Vice Head of the Technical Department felt rewarded if the knowledge he shared was applied by the recipient. This appreciation motivated him to share knowledge.

Other motivations of Middle Managers were: paying back (gratitude), tangible reward, obligation, relationships with recipients, getting more (further) knowledge, responsibility, and the perceived power of knowledge. The Head of the Professional Unit commented that he needed to share knowledge with people who shared knowledge with him, while the Vice Head of the Technical Department indicated that he shared knowledge so that he could gain more knowledge or understand knowledge further. The Vice Head of the Technical Department reported that he has to share knowledge with colleagues because they were fellow lecturers. He stated, "Because we are in the same team. All of us must know similar things at least. If we do not share knowledge, we do not reach our goal." He also assumed that sharing knowledge was his responsibility as a manager in his department. He was also motivated by his responsibility to share knowledge. The Head of the Professional Unit was motivated by an obligation to share knowledge. He perceived sharing knowledge as his obligation as a lecturer to apply *Tridharma*. He said, "Sharing knowledge in teaching, research, or to community is part of my duty to apply *Tridharma* which is written in (RS2's) vision and mission, to maximize the assets." Tangible reward motivated the Head of the Professional Unit to share knowledge.

The detailed findings on what motivates Middle Managers at RS2 to share knowledge are presented below. The presentation is initiated by the findings in the area of religious beliefs, power of knowledge sharing, getting support, being acknowledged, paying back (gratitude), tangible reward, obligation, relationship with recipients, getting more (further) knowledge, responsibility, and perceived power of knowledge. This information is followed by the presentation of the intrinsic and extrinsic incentives that motivate the Middle Managers at RS2 to share knowledge.

Religious belief

The Head of the Professional Unit shared knowledge because he wanted to serve God. In return, God willing, he would have more knowledge. He also shared knowledge because he believed the good deeds he does, would be “his prayer” when he dies. He stated,

We are obligated to share knowledge. Hopefully, Insha Allah, our knowledge will be increased. Mainly about that. Because of Him. In our religion it is mentioned, “Advance your knowledge to China”. Once we have knowledge, share it. So not only sharing money. Knowledge is even more valuable to share. It will be our prayer when we die.

The Vice Head of the Technical Department added that sharing knowledge was part of his *syukur*, his feeling of thankfulness because he could help others by sharing and giving useful knowledge. He reported, “I feel grateful also because the knowledge we give to others is useful for them...Maybe, all this time, they are doing something incorrectly; with the knowledge we give, they can fix the mistakes.”

The power of knowledge sharing

The Head of the Professional Unit was motivated to share knowledge in order to learn deeper and gain more knowledge. He believed if he shared knowledge, he would get more knowledge and it would make him even more powerful. One of the reasons for this was because he claimed that sharing reinforced the giver and the recipient. He stated,

I feel...I am more able to do things. The more I share the knowledge, the deeper the learning. For example, I know something, then I share it with my friends, and then they give feedback; this means I have more knowledge...When I share knowledge...my knowledge is actually increased. So my power is actually stronger. Just like the atomic bomb. It binds to create a power. It binds with each other to reinforce each other. So, by sharing, we can reinforce each other. I do not want knowledge just to belong to me. What happens if I have problem? Then I have to solve it by myself. So when I share knowledge, for example to Mr A. Mr. A will have power to do something. With his power, it means I have more power.

The Vice Head of the Technical Department, reported that by sharing knowledge in his collaborative work, he believed he could achieve a better result. He explained,

This knowledge collaboration will help us when we create a machine, a much better model, for example, because we collaborated. For research as well, the more feedback we get, hopefully, the better a research will be. It will make our case stronger.

To get support

Another motivation for sharing knowledge was to get support. The Head of the Professional Unit claimed if he shared knowledge, he would get support from the recipients if one day he had to face problems. The recipients would understand the issue and, therefore, they could help him solve the problem. If he was the only one who had the knowledge, when he had a problem, he had to solve it by himself. He reported,

So that I can share my problem with him. For example, when I have a task using that knowledge, the knowledge I shared with him earlier, I can just share the problem to him. So I can do my work faster. Easier. I just check the work later.

The Vice Head of the Technical Department agreed that if he shared the knowledge he had, the recipients would help him so that he could do his work better. He stated,

Because the more people know about that knowledge, for example related to machinery, the better. Well, the components in a machine are very complex. We probably just see one part or side. The power component, for example, maybe our friends know about it, about the power. They will give suggestions.

Being acknowledged

Being acknowledged by others motivated both Middle Managers to share knowledge as was described in Table 6.15. They needed to be acknowledged or appreciated and sharing knowledge was one of the ways to get that acknowledgement. The Head of the Professional Unit believed if he had knowledge, he would be honoured and one of the ways to get more knowledge was by sharing it (see 'the power of sharing knowledge'). He remarked, "Well...everybody does something because we need appreciation." The Vice Head of the Technical Department felt appreciated even if only receiving a "thank you" from recipients. He stated he would be happier if the knowledge he shared was useful. He added,

I never get rewarded for sharing knowledge. Well sort of. They say "thank you" if I share knowledge. For me, that is the reward, the appreciation...the knowledge I share is useful. They use the knowledge to do things, or they know something which they did not know before. It is also my motivation to share.

To pay back (gratitude)

The Head of the Professional Unit reported that he was motivated to share knowledge because he had to share something including knowledge with people who had shared something with him first. He said, "I share also for

improvement...our improvement and other people's improvement. I think it is our obligation to share something with people who give something to us."

Tangible reward

Financial reward motivated the Head of the Professional Unit to share knowledge. He mentioned that financial reward was an interesting aspect for him. He admitted, "When we share our knowledge, then the receivers gain new knowledge, which is a good point. Then, when they give us financial reward, I think it is fine."

Obligation

One Middle Manager at RS2 was motivated by their obligation to share knowledge as was explained in Table 6.15. The Head of the Professional Unit assumed that sharing knowledge was an obligation for a lecturer. He also felt obliged to share general knowledge, not his expertise, with the community. He recounted,

Especially because we are lecturers. We are obligated to share knowledge. I share knowledge with the community too, because that knowledge is general. So I feel obligated to share it...And I feel so delighted to share the knowledge with them.

Relationship with recipients

As a member of a profession, the Vice Head of the Technical Department felt that he had to help others and one of the ways to support his colleagues who had similar professions was by sharing knowledge. He recalled, "I share knowledge with my friends because I feel that we have similar professions. We are lecturers, academic people...I share because I just want to help my colleagues."

To gain more (further) knowledge

The Vice Head of the Technical Department, was motivated to share knowledge in order to gain further knowledge. He stated, "I give feedback in discussion, sharing knowledge, because I need to know the knowledge further. For example, about applied technology, someone shares it with me, and I am interested and want to know further."

Responsibility

The Vice Head of the Technical Department shared knowledge motivated by his responsibility as Middle Management to support subordinates doing their job. He recounted,

Well, I hold a structural position in my department. We always want to use up-to-date information. As part of management in my department, it is my responsibility to share information with staff to support their work or to support their teaching process. For example, we must deliver the information about classroom change, schedule.

Perceived power of knowledge

The Vice Head of the Technical Department, was motivated by the fact that sharing knowledge delivered power to the recipients. He believed that sharing knowledge would not decrease his power, but would give it to the recipients. He observed,

But when I share knowledge it does not mean I share power because what I share is just the knowledge. For example, about plagiarism. Many people make a mistake when they write an article or a research. Then I share the knowledge about plagiarism so now they can quote something correctly. I do not feel that my knowledge or power is decreased...my power from having the knowledge is still the same. So I share the knowledge. The knowledge they are have now, which is from me, creates power for them

Summary

Section 6.3.2 reports the findings related to the Middle Managers' motivations to share knowledge such as: religious beliefs, the power of knowledge sharing, to get support, being acknowledged, to pay back (gratitude), tangible reward, obligation, relationship with recipients, to get more (further) knowledge, responsibility, and the perceived power of knowledge. The intrinsic motivations were described in Table 6.17 as perceived power of knowledge and reciprocity. The extrinsic motivations were described as relationship with recipient, reward, and to get support. The power of knowledge sharing, such as by sharing knowledge they became even more powerful, was both intrinsic and extrinsic motivation.

6.3.3. Lecturer-Unit Participants

This section describes the findings related to what motivates lecturers who are active in a unit (Lecturer-Unit) at RS2 to share knowledge. There were three participants in this Lecturer-Unit group, Lecturer-Unit 1, Lecturer-Unit 2, and Lecturer-Unit 3 and their motivations to share knowledge were: the perceived power of knowledge, being acknowledged, the power of knowledge sharing, getting something in return, and to remember better / to strengthen the memory (health). Other motivations not common to all three were: to get support, assurance, religious beliefs, obligation, and to strengthen the knowledge.

Table 6.8

What Motivates Lecturer-Unit Participants at RS2 to Share Knowledge

Lecturer-Unit 1	Lecturer-Unit 2	Lecturer-Unit 3
Perceived power of knowledge	Perceived power of knowledge	Perceived power of knowledge
Being acknowledged	Being acknowledged	Being acknowledged
Remembering better (health)	The power of knowledge sharing	Strengthening the memory (health)
	Getting something in return (reciprocity)	The power of knowledge sharing
	Getting support	Getting something in return (reciprocity)
		Assurance
		Religious belief
		Obligation
		Strengthening the knowledge

The RS2's Lecturer-Unit group's motivations to share knowledge are: the perceived power of knowledge, being acknowledged, the power of knowledge sharing, to get something in return, and to remember better / to strengthen the memory (health). They believed the knowledge they shared would make the recipients become powerful or able to do their work better. If the recipients did their work better because of the knowledge given, the members of Lecturer-Unit group assumed the recipients would be better teachers improving output. Lecturer-Unit 2 said, "The knowledge (I share) will improve them too. If they know about a topic in advance, they can teach or share the knowledge with students better."

Participants shared knowledge because they were motivated to receive acknowledgement by the recipients. They felt appreciated and recognised. A 'thank you' from the recipients was good enough to show acknowledgement to them. Lecturer-Unit 1 stated, "Thank you is a reward for me because I feel appreciated. We do not expect thank you from them but it is a habit." The reward which implied recognition and appreciation was so powerful it could even motivate Lecturer-Unit 3 to share more. He explained, "Thank you makes me feel appreciated, rewarded. In the end, that feeling makes me happy. Then, next time if we have new knowledge, we will share with the same receivers, as they appreciate me."

The power of knowledge sharing, getting something in return, and remembering better / strengthening the memory (health) motivated the members of the Lecturer-Unit group to share knowledge with others as well. They were assured if they shared knowledge they would get even more knowledge. Knowledge was power as Lecturer-unit 1 reported, "Knowledge is power...because we have

knowledge, we know a lot of things. It will be our power, our strength.” They claimed if they had more knowledge it would make them more powerful. Lecturer-Unit 2 clarified,

We cannot touch knowledge. So no matter how much I share knowledge, my knowledge will be still the same. It may even be more, because when we share knowledge with someone, he usually gives a response or feedback. So I get new knowledge. I share knowledge to help them doing their work. In the end, it will support us to achieve our objective. Well, look, we are the same here. Helping them doing their work, and, as a result, our work will be completed faster. We can see the result of our work fast too.

Lecturer-Unit participants were motivated by the expectation that when they shared knowledge they would get something in return. They believed if they shared knowledge from a training program with their colleagues that one day, if their colleagues attended a training program, they would reciprocate. Lecturer-Unit 3 was convinced that sharing knowledge was a wise thing to do and it would ultimately be returned. To remember better or to strengthen the memory also motivated the members of the Lecturer-Unit group. Lecturer-Unit 1 assumed if she shared knowledge, she would remember or understand the knowledge better while Lecturer-Unit 3 was confident that sharing knowledge would strengthen his memory because when he shared knowledge he would think about it again.

Other motivations to share were: getting support, assurance, religious beliefs, obligation, and strengthening the knowledge. Lecturer-Unit 2 shared knowledge because she expected that if one day she needed support to do her job, she would get help. Lecturer-Unit 3 was motivated by his need to be assured that what worked for him would work for the recipients as well. Religious beliefs also motivated Lecturer-Unit 3 to share knowledge. He believed that sharing knowledge was doing a good deed, and helping other people, as was suggested by his religion. Obligations to apply *Tridharma* motivated Lecturer-Unit 3 so that other colleagues in the institution also had the opportunity to get points for *Tridharma*. He was also motivated by the fact that sharing knowledge would strengthen their knowledge and make it more comprehensive.

The detailed data about their motivations to share knowledge were: perceived power of knowledge, being acknowledged, the power of knowledge sharing, getting something in return, remembering better, getting support, assurance, religion, obligation, and strengthening the knowledge. The Lecturer-Unit participants' intrinsic and extrinsic motivation to share knowledge was presented following the detailed findings related to the Lecturer-Unit participants' motivations to share knowledge.

Perceived power of knowledge

The members of the Lecturer-Unit group believed, with God's permission that the knowledge they shared would "improve the recipients". The knowledge would also support the recipients to teach the students better. Lecturer-Unit 1 stated, "I am happy because 'Insha Allah', hopefully, the knowledge I give will make them better." Lecturer-Unit 2 added, "So it doesn't only belong to us, because I believe that the knowledge I have given will improve him (the receiver)." Lecturer-Unit 3 noted that the knowledge he shared would create power for others. So he was never afraid of sharing knowledge. He mentioned, "I will not lose my power if I share knowledge with them. I only share knowledge with my friends. Then the knowledge I share creates power for them."

Being acknowledged

The Lecturer-Unit participants were obviously delighted if the knowledge they shared made the recipients' lives better. 'Thank you' from recipients was an appreciation for what they had shared. It was a reward for them. Lecturer-Unit 1 recounted,

I just feel happy when someone improve themselves because of the knowledge that we share with them. I feel happy when the knowledge changes their life for the better. Well, I think the reward is when they say 'thank you' to you.

The 'thank you' reward encouraged Lecturer-Unit 3 to want to share knowledge more. He shared knowledge also because he wanted to feel comfortable when he interacted with the organisation's members. The need to feel comfortable was actually because he needed to be appreciated. He recalled,

Hhmmm...I think 'thank you' is the reward. For me 'thank you' is an appreciation for something. For example, someone gives us something, we say 'thank you' because we appreciate what he has given to us... It is very important to feel comfortable. We cannot live by ourselves. We need to interact and we need to feel comfortable when we interact with others. From that feeling, it will create the feeling of needing to be appreciated. I think all of us want to be appreciated. When we share something, we do not expect people to ignore us.

Lecturer-Unit 2 shared knowledge to show colleagues a better way to do things because she felt frustrated if someone could not operate something well. She assumed that she could show her friends in the unit how to do things better. She also felt that when she shared knowledge, she showed that she could do something for others. She reported,

My motivation is, I just like to share information...I feel frustrated if someone could not operate it well...I am happy because I can do something to make my friends more developed. Well, I feel that I can do something since I can share the information I have.

The power of sharing knowledge

The Lecturer-Unit group assumed that if they shared knowledge, they would get new knowledge and that indicated they were more powerful. Lecturer-Unit 2 said she expected that when she shared knowledge, the recipients were expected to share in the form of feedback for example. Therefore, she gained new and more knowledge as it is illustrated previously as well by Lecturer-Unit 2 at RS1 (page 112). As described previously, she also assumed if she shared knowledge, it would give her power to do her job. Therefore, she could finish her job faster. She stated,

Because I believe that the knowledge I have given will improve him (the receiver). When I share knowledge, I share the foundation to do things...When I share my knowledge, I am more powerful actually. Because...knowledge is not like goods.

Lecturer-Unit 3 agreed with the idea that if he shared knowledge, his knowledge would be increased. He reported, "I think sharing something good is a good thing to do. If we do something good, we will feel happy. Besides, if we share knowledge, our knowledge will be increased."

Getting something in return

Reciprocity was one of Lecturer-Unit participants' motivations to share knowledge. They were convinced if they shared knowledge, the recipients would share knowledge with them too, or something good would come out of it. Lecturer-Unit 2 realised that not all members could attend training programs. Therefore, she claimed that if she attended a PDP, after attending, she would share the knowledge. She expected if the recipients attended a training program later, they might share the knowledge with her too. She explained,

When I have an opportunity to go for a training, not all of my friends have the opportunity to attend similar training. Therefore, when I come back, I share the training result. So even though the others do not attend the training, they get similar knowledge. Maybe, next time my friends go for trainings, they will share the training material to me.

Lecturer-Unit 3 believed sharing knowledge was a good thing to do. Doing good things would bring him good things as well in the end. One of the good things that could happen to him was he would get new knowledge from recipients when he shared knowledge and one day that new knowledge could be shared with others. He explained,

My motivation for sharing teaching material is because I want to share something which is good for me, and hope that it will work for other people as well. I believe, if we do something good, it will give good effect to me as well.

To remember better

Two of the Lecturer-Unit participants were motivated by the idea that sharing knowledge would strengthen their memory and make them remember the knowledge better, as described in Table 6.17. Lecturer-Unit 1 recounted, "Sharing knowledge is not like sharing goods. Sharing goods, you will lose the goods. Sharing knowledge, you will not lose the knowledge. When we share knowledge, we remember or know better about the knowledge." Lecturer-Unit 3 added, "I feel happy because when we share, we actually look back at what we had learnt. It will remind us about the knowledge, will sharpen our memory about the knowledge."

Gaining/getting support

Lecturer-Unit 2 was motivated by the need for assurance that she would finish her job with the support of her team-mates. She believed sharing knowledge would help her do her job. Not sharing her knowledge in her team, in the end, would make it difficult for her to finish her work. She stated,

If I do not want to share in my unit, UKB, it will disturb the unit's work. Moreover, I have to do the big job by myself. That is what happens if I know something but I do not share it with my team in UKB. So, if I do not share in my unit, it will be a hindrance for me. It will slow down my work. It would be better if I share the knowledge with others so others can help me.

Assurance

The assurance that the knowledge which was good for him would be good for other people motivated Lecturer-Unit 3 to share knowledge. He mentioned, "My motivation to share teaching material is because I want to share something which is good for me, and hope that it will work for other people as well."

Religion

Lecturer-Unit 3 was motivated to share knowledge because he believed it was a good thing to do and that he should do something suggested by religion which was, helping others (share knowledge). He explained, "When I share stuff for conducting research, my motivation here is doing a good deed. In our religion, we are suggested to help each other. Sharing knowledge here is helping other people."

Obligation

Lecturer-Unit 3 shared knowledge, such as with the community, motivated by the knowledge he could improve his rank. Collaborating with his friends would also help him and his friends to get the points. He described, "When I share knowledge with the community, my motivation is to give the opportunity for me and my friends to reach points on dedication to the community, so we can fulfil our *Tridharma* points."

To strengthen the knowledge

Lecturer-Unit 3 shared knowledge motivated by the need to strengthen his knowledge. He assumed that sharing knowledge was essential to strengthen his knowledge as well as to clarify it. Moreover, sharing knowledge would make the knowledge more comprehensive. Lecturer-Unit 3 recalled,

Sharing knowledge...may be to strengthen the knowledge, to clarify the knowledge. For example, my friends know about the knowledge, part of it. Then I know the other part. If we exchange, it will be complete. It is about the need. It is about being interactive. When someone shares something with me, and I know a little bit about it, I share back, to make the knowledge comprehensive.

Summary

This subsection described the Lecturer-Unit's motivation to share knowledge such as perceived power of knowledge, being acknowledged, the power of knowledge sharing, to get something in return, to remember better (health) / to strengthen the memory (health), to understand better (psychology), to get support, assurance, religious beliefs, obligation, and to strengthen the knowledge. Table 6.19 lists the intrinsic motivations such as perceived power of knowledge, reciprocity, assurance, and health while extrinsic motivations in this presentation were: relationship with recipients, rewards, and support. The motivation which was both intrinsic and extrinsic is the power of knowledge sharing

6.3.4. Lecturer-Teaching Participants

This section demonstrates the findings related to what motivates lecturers who do not have structural positions and are not active in a unit (Lecturer-Teaching group) at RS2 to share knowledge. In this subsection the participants are Lecturer-Teaching 1 and Lecturer-Teaching 2. The motivations to share knowledge for Lecturer-Teaching are described in Table 6.20. Intrinsic and extrinsic motivations

which motivate the members of Lecturer-Teaching group at RS2 to share knowledge is also explained in Table 6.9.

Table 6.9

What Motivates Lecturer-Teaching Participants at RS2 to Share Knowledge

Lecturer-Teaching 1	Lecturer-Teaching 2
So that the recipients share back (reciprocity)	Getting feedback (reciprocity)
Feeling proud (recognition)	Recognition
Matching the teaching material (relationship with recipients)	Relationship with recipients
The power of knowledge sharing	The power of knowledge sharing
Tangible reward	Financial reward
Because they ask me to share	Assurance
Showing respect	
Obligation	

The Lecturer-Teaching participants' motivations to share knowledge were reciprocity, feeling proud (recognition), matching the teaching material (relationship with recipients), the power of knowledge sharing, and tangible rewards. Other motivations to share knowledge by the members of the Lecturer-Teaching group were: because they ask me to share, to show respect, obligation, and assurance. Participants were motivated by their belief that the recipients would share new knowledge back. So, they shared knowledge first, and would get the new knowledge which might be described as feedback. Lecturer-Teaching participants were still juniors, so they shared knowledge to get feedback from the seniors. Lecturer-Teaching 1 described, "We share. But I ask more because I am still junior." To get recognition or appreciation also motivated the Lecturer-Teaching group to share knowledge. When they shared knowledge they hoped they were appreciated, even with just a 'thank you' from the recipients.

Relationships with recipients motivated Lecturer-Teaching participants to share knowledge as well. The relationship was established in teamwork. They shared knowledge because they were in the same team. They were worried if they did not share knowledge, it would cause trouble for them eventually. Their relationship with recipients was not only influenced by their relationship as a team, but also by how strong it was. They indicated that the stronger the relationship, the more likely they would share knowledge.

The power of knowledge sharing and tangible rewards were the next motivators for Lecturer-Teaching participants. They believed if they shared

knowledge, they would receive new knowledge. Therefore, they would have more knowledge which motivated them to share the knowledge they had. They felt that a tangible reward attracted them to share knowledge. Even though the reward was not the main motivation for sharing knowledge, the reward encouraged them to share.

Other motivations to share were because 'they ask me to share', showing respect, obligation, and assurance. According to them, one of the ways to show that they respected the persons who shared knowledge with them was by reciprocating. Participants also shared knowledge simply to fulfil their obligation to teaching. The last Lecturer-Teaching participants' motivation to share was assurance. They shared knowledge because they needed to know if their knowledge was correct.

Reciprocity

The members of the Lecturer-Teaching group shared knowledge because they expected that the recipients would reciprocate in the form of feedback. Lecturer-Teaching 1 felt that as she was a junior she needed more knowledge in conducting research. She shared knowledge because she needed the new knowledge from her senior. Lecturer-Teaching 1 said,

I do research with some of my colleagues. We share. But I ask more because I am still junior for conducting research. I need to ask them a lot. Learn from them...I share with my colleagues about research so that they share back or give me feedback. I am inexperienced in research.

Lecturer-Teaching 2 did the same. She shared knowledge so that the recipients would share the knowledge back with her. When she shared research knowledge she was motivated by the expectation of getting feedback from recipients about the research. When she shared knowledge about the submission of a proposal, she assumed that one day the recipients would share similar knowledge with her as well. She recounted,

I share my teaching material with my colleagues so that they will give me feedback. I need to make sure that I do not teach wrong teaching material. I start the sharing first... share knowledge related to research for example, because I want to know if anybody in this institution is conducting similar research. I also want to know if the facility in this institution can accommodate my research. If I do the research in this institution...I share knowledge for example related to research because I hope that they will give me feedback...like after I attended a PDP, I share with colleagues. I hope that they will be motivated to submit the proposal for PKM (dedication to community). They need to know the schedule to submit the proposal. Well, I also hope that they will share similar information with me if they know it first.

To feel proud (recognition)

Participants shared knowledge motivated by the need for recognition. Lecturer-Teaching 1 felt proud if she could correct her colleague's mistake especially if the recipients said that she was smart. She reported,

I feel happy if I share knowledge with others. I feel satisfied. For example, if my colleagues' idea is wrong. Then I correct it, I feel satisfied. I feel proud...well, just thank you. Or they said that I am smart...I think recognition or just thank you is more effective to motivate me to share.

Meanwhile, Lecturer-Teaching 2 felt appreciated if colleagues recognised that the knowledge that they knew came from her. She stated,

When I share knowledge with others, I feel happy. I am happy I can share something I know. I also feel that it is rewarding for me when people know the knowledge I share. I feel appreciated. It is up to them to develop the knowledge.

To match the teaching material (relationship with recipients)

The relationship with the recipients motivated Lecturer-Teaching participants to share knowledge. Lecturer-Teaching 1 admitted that she shared knowledge because she was in the same team with the recipients, as one subject was taught by a team with more than one lecturer. She explained,

I share because I want to match the teaching material. We teach similar subject. The knowledge. So sometimes they ask how to teach a certain topic, and what the topics to be presented in the classroom are, for example, the topic about academic writing for students' final report.

Similar to Lecturer-Teaching 1, Lecturer-Teaching 2 also described a similar idea. She recalled, "I share teaching materials or job sheets with a colleague who is teaching a similar subject. We are in the same team for teaching this subject. I share the knowledge through email." Lecturer-Teaching 2 added that she needed to share knowledge with recipients to avoid problems for herself such as teaching the wrong topic. She added:

If I do not share knowledge, I feel it is a burden for me because I have something but I do not share it. It will cause me problems too. For example, I team up with a colleague to teach a subject. If I do not share, I might teach the wrong topic. Or I teach a topic which have already been discussed by my colleague. Or some students do not get the same topic discussion. The students will be the victim and I feel guilty.

However, the relationship with recipients which motivated the members of Lecturer-Teaching group to share knowledge was not only based on the relationship with team mates but on how strong the relationship with the recipients was even if they were not in the same team. Lecturer-Teaching 2 illustrated, "The factors that

influence my sharing is my relationship with my colleagues who are the recipients. I share with colleagues that I have a good relationship with.”

The power of knowledge sharing

The power of knowledge sharing motivated participants at RS2. They believed if they shared knowledge, they would receive new knowledge which would increase their knowledge. Lecturer-Teaching 1 mentioned,

It means that if we have knowledge, we can share more knowledge with other people. Besides, if we share, we usually receive feedback. Then it will be new knowledge. If they share knowledge to me, I will share back too. Give and take. If we give feedback, there will be more knowledge created.

Lecturer-Teaching 2 added, “I just like to share. When I share, I actually get more knowledge, the feedback from them. I feel happy if I share knowledge with my colleagues”

Tangible reward

Participants shared knowledge with their colleagues motivated by tangible/financial rewards as illustrated in Table 6.20. Both Lecturer-Teaching participants admitted that financial reward was quite effective in encouraging them to share knowledge. Lecturer-Teaching 1 recounted, “Financial reward encourages me to share more. I think this kind of reward is quite effective.” Lecturer-Teaching 2 added, “Financial reward may encourage me to share more but that is not important for me. Without rewards my colleagues and I share knowledge. It is our habit to share”

Because they ask me to share

Lecturer-Teaching 1 shared knowledge because her colleagues asked her to share. She stated, “I share because they ask me to. Through SMS (Short Message Service). Maybe because I am more experienced. Just informal discussion.”

To show respect

One member of the Lecturer-Teaching group reciprocated knowledge because she needed to show respect to the persons who shared knowledge with her. She did not want people to disrespect her because she did not respect the givers. Lecturer-Teaching 1 said, “I share back because I don’t want just to receive knowledge all the time. Besides, by sharing back it shows that I respect his sharing. If I only receive, people would not respect me. I don’t feel comfortable.”

Obligation

Obligation also motivated Lecturer-Teaching 1 to share knowledge. She might not have a strong relationship with recipients but she would still share the knowledge if it was related to her obligation, such as teaching. Lecturer-Teaching 1 recounted, "My obligation in teaching also influences the sharing. So even though I do not have a strong relationship with a colleague, I will share because it is demanded by my obligation in teaching."

Assurance

One participant shared knowledge motivated by the need for assurance that her knowledge was right or that she did not teach the wrong material. Lecturer-Teaching 2 described,

When my colleagues share knowledge with me, I give feedback. I add more information about the topic. After that, it became a discussion. We can also find out if the knowledge we have is right or wrong...I share my teaching material with my colleagues so that they will give me feedback. I need to make sure that I do not teach wrong material. I start the sharing first.

Summary

This section presented the findings of Lecturer-Teaching's motivation to share knowledge such as: so that the recipients share back (reciprocity), to feel proud (recognition), to match the teaching material (relationship with recipients), the power of knowledge sharing, and tangible reward. Other motivations were: because they ask me to share, to show respect, obligation, and assurance. The intrinsic motivations as listed in Table 5.20 were: reciprocity and assurance. The extrinsic motivations were relationship with recipients, reward, because they ask me to share, and to show respect. One motivation which was considered as both intrinsic and extrinsic in this finding was the power of knowledge sharing.

6.4. Within-Case Analysis Research Question 2

What are the Research Site 2 participants' motivations to share knowledge: an overview.

Table 6.10

Participants' Motivations to Share Knowledge at RS2

Motivation to share	Participants			
	Top Manager	Middle Manager	Lecturer-Unit	Lecturer-Teaching
Religious beliefs: want to be like prophet Mohammad/good deed	√	√	√	
Being acknowledged/recognition	√	√	√	√
The power of knowledge sharing	√	√	√	√
To assure he did the right things	√			
Strengthening the topic discussed	√			
People's agreement	√			
Responsibility	√	√		
Obligation	√	√	√	√
Health	√			
To make knowledge meaningful	√			
Perceived power of knowledge	√	√	√	
To get support		√	√	
To pay back (gratitude)		√		
Relationship with recipients/to match the teaching material		√		√
Tangible rewards		√		√
To get more/further knowledge		√		
To remember better/strengthen memory (Health)			√	
To get something in return (reciprocity) /so that the recipients share back/want to get feedback			√	√
Assurance			√	√
To strengthen the knowledge			√	
Because they asked me to share				√
To show respect				√

Motivators for knowledge sharing at RS2 are illustrated in Table 6.10. All participants agreed that being acknowledged/recognised, the power of knowledge sharing and an obligation to share knowledge were major motivators. Religious beliefs motivated three groups of participants, Top Managers, Middle Managers and Lecturer-Unit participants. One Top Manager was additionally motivated by several other factors: the assurance that he did the right thing, the need to strengthen the topic being discussed, people's agreement (people agreed to what they said), "health" and "making knowledge meaningful". Both Top Management participants and Middle Managers believed that sharing knowledge was a responsibility and along with Lecturer-Unit participants were also motivated by the perceived power of knowledge. Meanwhile gratitude and the acquisition of further knowledge motivated Middle Managers. Both Middle Managers and Lecturer-Unit participants were motivated by getting support from others whereas, relationships with recipients, to match teaching materials along with tangible rewards motivated both Middle Managers and Lecturer-Teaching participants. Lecturer-Unit participants were also motivated by strengthening personal memory and strengthening knowledge whilst both Lecturer-Unit participants and Lecturer-Teaching participants were motivated by reciprocity, wanting to gain something in return and assurance. Finally, Lecturer-Teaching participants shared knowledge as they were motivated by the need to show respect and because they were "asked to share" by the recipients [their colleagues].

Chapter Summary

The presentation of this chapter describes the within-case analysis of what knowledge is shared at Research Site 2 (RS2). Participants at RS2 shared knowledge related to their obligation as lecturers in Indonesia. They shared knowledge such as teaching material, research methods, and knowledge on community service. For participants who were in management team, they shared knowledge related to their responsibilities as managers. They shared policies or information which came from the government. The participants at RS2 who were not the member of management team, they shared knowledge mainly related to expertise, unit's service, teaching technique, and current affairs (see Appendix J.2 for detailed information on what knowledge is shared). The knowledge shared mostly tacit knowledge (see Appendix K.2) because the knowledge was created in the organisation mostly through socialisation (see Appendix L.2). The approach used depended on what knowledge is shared and which approach was more effective to share knowledge. For example,

when sharing n knowledge related to obligation and responsibilities, the participants shared knowledge in a formal discussion. Even though most participants agreed that they felt more comfortable shared knowledge in an informal meeting, the participants at RS2 believed that sharing knowledge in a formal meeting was more effective than sharing knowledge in an informal meeting because the participants were serious and quite. At RS2, face-to-face interaction was preferred.

Religious values, the power of knowledge sharing, acknowledgement, people's agreement, health, to get support, gratitude, relationship with recipients, to get something in returns, and assurance were motivation among other motivations which motivate participants at RS2 to share knowledge to share knowledge at RS2. The motivations might be intrinsic or extrinsic motivations (see Appendix M.2). The motivation, however, was usually followed by expectation which motivated participants to share knowledge.

The following chapter presents research findings from Research Site 3 (RS3). The presentation of the findings cover points to be discovered such as within-case analysis of what knowledge shared, types of knowledge share, approach to share knowledge. The illustration of research findings will also present how knowledge is created, and the participants' motivations to share knowledge.

CHAPTER SEVEN : HOW DOES KNOWLEDGE SHARING OCCUR AT RESEARCH SITE 3?

Previous chapter presented how knowledge sharing happens at Research Site 2 which included the presentation of what knowledge was shared, the approach, and what motivated participants at RS2 to share knowledge. This chapter describes the knowledge shared at Research Site 3 on Java Island in response to the Research Question 1: 'What knowledge is shared at RS3?' and Research Question 2: 'What motivates the participants to share knowledge?' The chapter is arranged into four sections, Section 7.1: Knowledge shared by Top Managers, Middle Managers, Lecturers who are active in a Unit (Lecturer-Unit participants), and Lecturers who do not hold any structural position and also are not active in a unit (Lecturer-Teaching participants); Section 7.2 within case analysis for RQ1; Section 7.3 What motivates participants to share knowledge; and Section 7.4 within case analysis for RQ2.

Top Managers are lecturers who hold the highest structural positions such as Director or Assistant Director. Middle Managers are the lecturers who lead a unit or hold a position in the management of a department at RS3. At Research Site 3, they are the Head of Technical Study Program 1 and Head of Technical Study Program 2. Lecturer-Unit are lecturers who are members in a unit and are Lecturer-Unit 1 and Lecturer-Unit 2. A unit in a State Polytechnic is a subdivision in the organisation which provides a certain service not only for the members of the institution but also for the community outside it. Finally, Lecturer-Teaching are lecturers who do not hold a structural position at any level, nor are they members of a unit in the institution.

Section 7.1 is divided into four subsections which explain the knowledge shared and the types of knowledge shared which can be tacit or explicit, and explains how knowledge is created, and the approach applied during the knowledge sharing. Section 7.2 is the within case analysis of RQ1 while Section 7.3 describes what participants reported as their motivation to share knowledge. Section 7.4 is the within case analysis that explores the data in relation to Research Question 2. This is divided into the similarities and differences which motivate participants to share knowledge.

7.1. What Knowledge is Shared at RS3

This subdivision demonstrates what knowledge is shared by four groups of participants.

7.1.1. Knowledge Shared by Top Managers

The Director and the First Director Assistant shared knowledge, related to Professional Development Programs . They also shared knowledge in the area of recommendations/advice/feedback, participation, information, policy, and administrative issues. The knowledge associated with PDPs shared by the two top managers included PDP information, results (key points), reports, materials, and colleagues' PDP reports. The knowledge shared by Top Managers at RS3 is displayed in Table 7.1.

Table 7.1

Knowledge Shared by Top Managers at Research Site 3

Director		First Director's Assistant	
Area of knowledge shared	What knowledge shared	Area of knowledge shared	What knowledge shared
Professional Development Programs	PDP information	Professional Development Programs	PDP results (key points)
	PDP results (important key points)		PDP materials
	PDP reports		PDP reports
	A colleague's PDP report	Information	
	PDP materials	Policies	
Recommendations/advice		Feedback	
Participation		Administrative issues	
		Reports (a report after an event was carried out)	

The Director explained that he had attended several PDPs and shared the key points from those programs with the Heads of Departments at RS3. He indicated that PDP reports might not be necessary, but it was important to share the key points and to document them. During a program which he attended formally [appointed by the Director to attend a PDP], he recalled, "well, no need to make a

report for seminars, usually just sharing. But for important cases, they have to be documented.....the knowledge from training courses, must be shared with other friends. In management meetings usually.” The First Director’s Assistant explained that he shared the knowledge he gained from a PDP in events held at RS3 with broad number of recipients. He said that,

We have to submit a report (after attending a PDP). We also have many events here that we can use to share knowledge (from a PDP/key points) there, maybe as presenters. We also have meetings, where we can share knowledge (from a PDP/key points) as well. The sharing is not only done internally, but across universities, polytechnics, and so on.

Both Top Managers share PDP reports with their supervisor. The First Director’s Assistant shared reports with the Director while the Director shared the PDP reports with DIKTI. The Director stated that he submitted the report to DIKTI only when they asked for it. He claimed that,

...as a director, I am on the top of the structure here. So I usually do not make a report...Except if it is about financial management and the course from the centre government, I need to make a report. If the course is from DIKTI, sometimes DIKTI asks us to make a report, but sometimes it does not

Both the Top Management participants at RS3 shared material from the PDPs they had attended. The Director shared the PDP material through disposition. This is a technique where information is sent in a formatted note and usually includes an attachment. The Director elaborated,

I share hardcopy and softcopy (the PDPs’ material)...I usually do disposition. Copy the material, then the copies will be distributed. Disposition. Maybe to heads of departments, heads of divisions or units, to director’s assistants, and so on....after attending a training, for example, I gather my friends...After that, I will send the disposition...

As the Director of RS3, he felt that he was obliged to share information regarding PDPs. He also shared other colleague’s PDP reports with the Director’s Assistants when it was necessary [other institution’s members needed to know information in the PDP reports]. Both Top Managers at RS3 shared recommendations, feedback and advice with supervisors such as DIKTI or to subordinates. The Director remarked,

Well, normally, that is not how it works. For example, regarding the national commencement test to enter a polytechnic. We set the test after national universities conducted their commencement test, and announced the result. I recommended to do it at the time, when universities set the test, polytechnics should do the commencement test as well. By doing so, we will get a better quality inputs. We agree, then we recommended it to DIKTI, DIKTI agreed. So we held the test at the same time Universities had their commencement test as well. It works. In (RS3), the number of student withdrawals are fewer than before. Good news.

The findings showed that the Director used his presence at departmental meetings to share knowledge while the First Director's Assistant deployed the use of IT. The Director shared knowledge with subordinates by involving himself in the departments' activities. Meanwhile, the First Director's Assistant shared information through a mailing list and shared policy informally with his colleagues at the institution. The First Director's Assistants at all State Polytechnics in Indonesia established a mailing list in order to communicate or share information amongst themselves. RS3's First Director said that he shared reports with the Director and information related to administrative issues with his subordinates.

Formal and Informal Approaches

This subsection describes the approach applied during the knowledge sharing process. The approaches applied during the knowledge sharing process by Top Managers can be formal, informal, or both formal and informal.

The data shows that the members of Top Management choose the approach influenced by what knowledge was shared, types of knowledge shared (tacit or explicit), and who the recipients were. The effectiveness of the approach, in relation to the sharing of the knowledge, was also taken into consideration. This subsection also explains which approach, formal or informal, was more effectively utilised in the knowledge sharing process. Face-to-face interaction and the use of IT to share knowledge are elaborated also.

What knowledge was shared, types of knowledge shared, and who the participants or the recipients were, determined the approach used by the Top Management participants at RS3. A report from PDPs was usually shared formally in hardcopy following a ruling or regulation related to the submission of PDP reports. The Director explained,

The approach I use to share knowledge can be formal or informal. For formal discussion, we usually to share training results...There is a rule about submitting a report after the training. That is written in the official delegation letter...so, with that report, we can analyse it to make [a] decision about what we should do next. What is the follow up...

The Director went on to say that the report could be re-shared through the disposition mechanism. He recounted, "Yesterday I asked my PR to attend the socialization about e-KTP (e-ID). After that, he submitted a report, then I gave it to my 2nd Director's Assistant." The First Director's Assistant added, "we have to submit a report (after attending PDPs)... the report is submitted to the Director ... I share [the] document in a meeting or workshop. So I share the hardcopy and softcopy".

The sharing of PDP key points/results may be done formally or informally. The Director said that he shared the key points from training informally with his subordinates. The feedback or advice was part of the sharing with his subordinates. He stated,

...for example, when they attended a training, after finishing the program, they come to me and reporting about the training. They also make a written report, Hardcopy. They sometimes also share it face-to-face...I share back by giving advice to him sometimes. How to improve himself, and tell him that he did a good job. He represented me. So I share this knowledge, advice, so that he feels confident. He feels comfortable. That is how I share back

Unlike the Director, the First Director's Assistant shared the key points from PDPs in a formal meeting, as a presenter, not only with colleagues at RS3 but also outside the institution. He recalled, "We also have many events here that we can use to share knowledge, maybe as presenters. We also have meetings, where we can share knowledge as well. The sharing is not only internally, but across universities, polytechnics, and so on".

Types of knowledge might also determine the approach taken. For sharing certain documents or softcopies, website or email is the choice. The Director stated,

Well, internally, I do not share documents that much. But I share a lot with other Polytechnics' directors as I am in the association. We have BLU (RS3's website). So I put document, knowledge, then I share to other directors...BLU is open. So other heads of departments or friends here can open it and read it...IT is extremely useful for knowledge sharing ...for sending softcopy, there is no procedure. But for hardcopy, yes. There is procedure for that. It is the disposition.

The recipients of the knowledge shared determined the approach used. To share documents or reports with supervisors, the approach used was normally formal and for subordinates the formal approach might also be applied for sharing knowledge. The Director at RS3 claimed,

Well, as a Director, I am on the top of the structure here. So I usually do not make a report. Just a note that I share with the heads of departments. Except if it is about financial management and the course from the centre government, I need to make a report. If the course from DIKTI, sometimes DIKTI asks us to make a report, but sometimes they do not ask us to make a report...I usually do a disposition. Copy the material, then the copies will be distributed. Disposition. Maybe to heads of departments, heads of divisions or units, to Director's Assistants, and so on...

He went on to say that the formal mechanism was also taken when he shared knowledge with his Director's Assistants at RS3. He added that, "I share knowledge with my Director's Assistants, formally. Outside the office I have some good friends. I share quite often with them", and with his fellow State Polytechnics' Directors, he shared knowledge in formal forums. He remarks,

Well, when I do sharing, it turns into a discussion. It can be in a meeting to, then it turns into a discussion in that forum. That is how we do it here. I, as a member of the Association of Indonesia Polytechnic Directors, if we have an important issue which has to be discussed nationally, I discuss the issue in that Directors' forum.

The First Director's Assistant used both formal and informal approaches to share knowledge with his colleagues who were also the First Director's Assistants of State Polytechnics. He reported that,

It can be formal or informal. I have mailing list. I am the head of Polytechnics' 1st Directors' Assistants' Forum, so I often share with the members in the mailing list. In here, we have regular meetings where we can share a lot in those meetings. We up-date our information there. We also do informal meetings

The effectiveness of the knowledge sharing approach and how practical that approach is in sharing knowledge could be factors to consider in selecting which approach to employ. The speed at which the knowledge is shared was also considered. The Director stated;

IT is important to facilitate knowledge sharing...it is an effective and efficient way to share knowledge too. It is also fast. If it is hard copy, you have to copy it one by one, compile it, then disposition, etc...because we can send document immediately and directly. I can send directly to the heads of departments. No need layers, for example, to my staff, then to the heads of departments...

The use of IT to share knowledge was seen as practical, for example, if the data needed to be changed. The Director said that, "...for softcopy [electronic copy], it is easy when we need to make changes..."

The Top Management participants agreed that both face-to-face interaction and using IT techniques to share knowledge were effective. From the presentation above it can be observed that both Top Managers at RS3 shared knowledge face-to-face and also utilised IT as well as using a formal or an informal approach. The Director thought that IT and face-to-face interaction supported each other and provided the detailed information needed. Nevertheless, he believed face-to-face interaction was essential to understand the knowledge shared. Moreover, the Director reported that the body language was important even for himself as a director. He explained,

I think direct interaction and through IT for sharing knowledge are both effective actually. because, if only via email, sometimes people miss it. Not very often check their emails. Besides, if we send via email, we still need to explain it to them. So we need both I guess. We still need the social interaction...we are humans. We still need social interaction. We interact with humans, not machines. People, when we talk directly, and we talk nicely to them, they are motivated. Excited. But if it is only an email, I do not react

excitedly...hmm...through direct interaction the receivers will understand better. But for more detail information, still need to send through email...look, we are managing humans. The way we talk, body language, are important. When we talk, we will find out if the receivers are happy or not. We know if they are interested or not. Not only them. It is for me too. It is important for me to know the way people talk, their body language...that is why. Leaders must have good attitude when they are talking, their body language. Have to be pleasant.

The First Director's Assistant believed that both face-to-face and IT techniques were important. IT he explained was cheaper and a means of storage. Face-to-face interaction itself he believed would create the knowledge exchange during the knowledge sharing process. He recalled that,

Both direct discussion and discussion via IT are effective I think...we need to combine them...because if we just talk, it will not be effective. Have to combine both IT and interaction. The sharing is through interaction, supported by IT...IT is useful for sharing knowledge as it makes the sharing easier and for cost efficiency. For example, the document is quite thick. And I have to share it to a hundred people. That would cost a lot. And takes time too. With IT, it would be easier...first, the document, it effective through IT. Good for storing documents. We can open it anytime through our computer...For example, I save data in my email and when I need to use it for presentation, I just open it. It is a safe place...In interaction, there will be feedback. Knowledge exchange, discussion. If we use IT, it will be limited. May not have discussion. IT chatting is fine but still different from direct one. The use of IT itself is also good as I said earlier. Save time and cost.

The Top Management participants at RS3 believed that the formal approach was more effective than the informal one even though the Director thought that both approaches were important. The Director also declared that the formal approach was initiated by an informal one. The formal approach was viewed as accountable since the meetings generated recorded minutes. He noted,

Both (formal and informal are effective) I think...but formal discussion is more effective. Informally, I have many friends here and they share knowledge to me. In formal discussion, for example, the Directors Forum. But usually, what happen is, it is started from informal discussion, then we discuss it in formal forum. And it is effective. From informal, and to show that we are serious, we discuss it again in formal discussion...because we have a meeting minute. But of course, the formal discussion is initialized by the informal discussions earlier as I said before...

The Director understood that using formality was part of a government employees' job specifications. He claimed,

... not that informal one is not effective. It does help. But we cannot count on it. Everything has to be formal here because we are government's employees. But informal discussion is really supporting. But without the formal one, it will be useless. Meaningless. For example, I say, we have bonus for lebaran (Muslim celebration). It will be meaningless for them. But when there is a legal letter about it, where they can sign if they receive the bonus, then they will believe it. Therefore, in a state organization like this, being formal is important. In formal, there is someone who hold the responsibility.

The First Director's Assistant considered the formal approach to be more effective since it provided more knowledge for him, more often, and the knowledge was documented. The participants in a formal meeting were also more serious and knowledge exchange took place. As one of the leaders, he was invited to many formal meetings. He explained that,

Formal discussions more effective...Not much I get in informal meetings...the leaders usually come to the meeting, becomes the chair person (lead the meeting). We get involved in discussions. But it also depends on the topic...for example, every semester, I must set up meeting at least 3 to 4 times. In one semester. In those meetings, we share our expertise. For informal meeting, maybe monthly?...In informal discussion, we are limited by time. If they not here, then we do not discuss things...It is because in formal meeting, the sharing is documented well. The participants are more serious as well. They also exchange knowledge well.

Summary

Top Managers at RS3 shared knowledge in the areas of: Professional Development Programs , recommendations/advice/feedback, participation, information, policy, and administrative issues. In the area of knowledge of Professional Development Programs the Director and the First Director's Assistant shared PDP information, results (key points), reports, material, and colleagues' PDP reports.

Types of knowledge shared by the Director and the First Director's Assistant are individual semantic tacit and explicit knowledge such as PDP results, recommendations/feedback/advice, participation, policy, administrative issues, PDP reports and reports from the First Director's Assistant to the Director. Both Top Managers shared declarative individual tacit and explicit knowledge and also individual and collective tacit knowledge with colleagues.

The members of Top Management created the knowledge through socialisation, externalisation, combination, and internalisation. The knowledge was created through internalisation when they shared information such as PDPs. The sharing of key points from PDPs created knowledge through socialisation, externalisation, and internalisation. Meanwhile, the disposition of colleagues' reports on PDPs created the knowledge through Combination. The sharing of recommendations/feedback/advice created knowledge through socialisation.

Both Top Managers employed formal and informal approaches and determined what knowledge was shared. The types of knowledge, and who the recipients were determined the approach used. The effectiveness of the approach in sharing the knowledge and how practical that approach was, also decided the

approach selected. Both Top Managers believed that the formal approach was more effective than the informal one. They also agreed that both face-to-face and IT techniques were effective in knowledge sharing.

7.1.2. Knowledge Shared by Middle Managers

This section presents the findings on what knowledge is shared by Middle Management participants at RS3. Middle Managers were the Head of the Technical Study Program 1 and the Head of Technical Study Program 2. A department at a State Polytechnic in Indonesia may consist of several study programs. Electrical Engineering for example, may have two or three study programs: Electronics Study Program, Electrical Study Program, or Information and Technology Study Program. The Heads of the Technical Study Program 1 and 2 are Middle Managers at RS3 and are both heads of the study program in their department.

The members of Middle Management at RS3 shared knowledge related to *Tridharma*, which included teaching materials, research methods, and dedication to the community. Both Middle Managers shared knowledge in the area of the Professional Development Programs such as their results, reports, materials, and information. The academic affairs area of knowledge was shared as well. The Heads of the Technical Study Programs 1 and 2 also shared knowledge in other areas such as current affairs, management, expertise, information to stakeholders, and institutional data. Both the Heads of the Technical Study Programs shared knowledge, not only with their colleagues, but also with the community or with other Middle Managers from other State Polytechnics in Indonesia. The data on the types and what knowledge is shared by Middle Managers at RS3 is presented in Table 7.2.

Table 7.2

Knowledge Shared by Middle Managers at RS3

Head of Technical Study Program 1		Head of Technical Study Program 2	
Types of knowledge shared	What knowledge is shared	Types of knowledge shared	What knowledge is shared
Tridharma	Teaching material	Tridharma	Teaching material
	Research methods		Research methods
Professional Development Programs	PDP results		Dedication to community
	PDP reports	Professional Development Programs	PDP results
	PDP material		PDP reports
Academic affairs			PDP Information
Current affairs		Academic affairs	
Management		Expertise	
		Information to stakeholders	
		Institution's data	

The table above indicates that the Middle Management participants shared knowledge related to the *Tridharma* area of knowledge, (for example teaching materials, research methods, and dedication to the community). The Head of Technical Study Program 2 explained that he needed to share knowledge in *Tridharma* to raise his rank as a government employee. He stated, "I share this because as a government employee, we must collect points to upgrade our rank." He added, that sharing knowledge in dedication to the community was seen as an obligation, so what he did for the community did not need to be rewarded. He recounted, "Usually, in the organisation that sends me for training for example, financial reward is important. But, like mentoring teenagers (disadvantaged teenagers), I do not need any financial reward.....Sharing by doing these things is my responsibility..."

Regarding Professional Development Programs both Middle Managers shared PDP results (key points), reports, material, and information. Even though there were no rules for sharing key points, the Head of Study Program 2 believed that sharing PDPs' key points with colleagues was his responsibility as the Head of the Technical Study Program especially the key points from national level training. He elaborated,

It is an obligation. Such as curriculum evaluation (a PDP). Every four years. But not all training result is shared because we have limited time. So

usually, a national training that we share. For local training, not so much. Because if it is local, we are the one who invites the guests or speakers...

Triggered by the loss of competition with Polytechnics in Malaysia, the Head of Technical Program 2 even uploaded the key points of PDPs he had attended to the RS3's website. He said that, "Uploading the key points in the website because I was triggered by our loss from Malaysian universities related to professional development programs sharing..."

The Heads of Technical Study Programs 1 and 2 agreed that submitting a PDP report is an obligation. The Head of Technical Study Program 1 declared that, "yes, in [my] official permission letter, it is said that I must make a report after attending the program..." The Head of Technical Study Program 2 added,

Another rule is, after training, we must submit a report to top management...There is a rule, I have to submit the report to top management. Even to share with my friends, there is a rule. I have to ask permission from top management. For example, if I plan to share about curriculum, I have to report to top management, letting them know, that I will change the curriculum. First Director's Assistant will give an input or advice. Unless if he is not in campus.

The PDP material was shared informally according to the Head of Technical Study Program 1. He realised that it would be better to share the PDP material informally, because his colleagues had tight schedules, so it would be hard to gather colleagues in order to share it. He reported,

Not formally. It is difficult to gather people to have formal meeting for sharing like that. They have tight teaching schedule. So for example, after having a training, I just tell them. I want to share. We meet on our break. In this department, we have lecturers' room and you can meet them there. So I do not need to gather them. Just come to those rooms...it works. Discussions happen...

They shared knowledge in the area of academic affairs, as they were responsible for managing academic affairs. Both the Heads of Technical Study Program 1 and 2 also shared knowledge in other areas such as, current affairs, management, expertise, information to stakeholders, and institutional data.

Formal and Informal Approaches

This subsection explores which approach or mechanism is deployed by Middle Managers a RS3 in the knowledge sharing process. The approaches utilised during knowledge sharing can be both formal and informal. The findings also showed that Middle Managers used both formal and informal methods when sharing knowledge. The data also demonstrates the rationale for using the approach, which might be determined by which knowledge was shared, the

recipients, and how effective the approach to be applied would be during the knowledge sharing process.

Middle Managers at RS3 shared knowledge in *Tridharma* and PDPs formally. In *Tridharma*, Middle Managers shared teaching modules formally during teaching-learning time in classrooms. With their colleagues from similar knowledge backgrounds and expertise, or the subject coordinators, they also shared the teaching module formally in official department meetings. In those formal meetings they designed the curriculum/syllabus together. They not only shared teaching materials in formal meetings, but in informal meetings also. As the Head of Technical Study Program 1 stated earlier,

We usually share teaching modules among Subject Coordinators. In a formal meeting. For example, digital subject coordinator. We share knowledge, such as teaching modules, in the same expertise group...we do sharing informally at lunch break or on semester break...

Sharing of research methods was through journals which were facilitated by the publication committee at RS3. They also collaborated with their colleagues to manage research funding. The Head of Technical Study Program 1 mentioned that Middle Management participants shared knowledge related to Dedication to Community, by setting up a small electric generator machine to be utilised by the community and training the younger generation in the skill of using it. They shared their knowledge by carrying out tasks and activities for the community.

In the Professional Development Programs, Middle Managers shared the programs' reports and key points (curriculum evaluation) formally. Submitting a PDP report was part of the formal mechanism, which had to be conducted after attendance. As mentioned earlier, submitting a PDP report was a regulated requirement. They also shared key points of programs they had attended. The Head of the Technical Study Program recounted, "I officially gather my colleagues too, to share the result of my training, workshops..."

Additionally, knowledge related to PDP material, key points, information, current affairs, expertise, and academic affairs was all shared informally. The Head of Technical Study Program 1 shared PDP material by leaving the material on his table and he welcomed or allowed his colleagues to read or borrow it. By sharing the material informally, he found that it created discussion. PDP key points were also shared informally. The Head of Technical Study Program 1 gathered his colleagues informally then shared the key points he got from the PDPs he had attended. He recalled that,

After attending a PDP, we gather our friends, tell them what the training was about. We also share the book sometimes. The trainings which I attended were usually about electrical subject. That is our expertise here. So with other lecturers, sometimes they ask about the training...

Middle Management participants at RS3 shared current affairs, expertise, academic affairs, information with stakeholders, and the institution's data informally with their colleagues. They advised that they could not talk every day with each other and the Head of the Technical Study Program 1 gave an example of how he could not meet his colleagues from the Warehouse Unit, stating that the distance between his office and warehouse was far. Therefore, they set an *Arisan* so that they could have informal discussions and discuss any issues.

The Middle Managers shared their expertise in informal discussions with their colleagues. Middle Management participants also uploaded the information regarding students' attendance, to their institution's website. The Head of Technical Study Program 2 explained that he employed a similar way of sharing knowledge, which was to upload information to the organisation's website when he wished to share information with RS3's stakeholders. He went on to say that he shared softcopies (USB) of RS3's data with other colleagues from other institutions when he was in meetings with them.

The identity of the intended recipients also determined the approach applied during the knowledge sharing process. The sharing could be more formal when the recipients were in higher structural positions. The Heads of Technical Study Program 1 and 2 submitted PDP reports formally to the Director or the Head of the Technical Department. The Head of Technical Study Program 1 stated that the sharing of knowledge related to management was carried out in a formal meeting. He claimed, "...they (Top Managers) do come to the formal meeting. Even though just for short time...With Top Management it was usually on general topics. Not about expertise. Usually about this campus. This institution. It is effective."

The sharing of knowledge would take place informally when the age of the recipients and the information givers were similar, and when the recipients were stakeholders or colleagues from other universities in Indonesia. The Head of Technical Study Program 1 explained, "We never invite colleagues just for me to share knowledge. Well, our ages are not far different. So, we really feel like friends. So we share knowledge as friends. Informally. A bit hard if we have to do it formally..."

The effectiveness of the approach to be applied during the knowledge sharing process was considered when choosing the right approach. The Head of Technical

Study Program 1 indicated that the use of informal mechanisms was needed as the lecturers at RS3 had tight schedules and the distance between his department and the warehouse was far. He viewed the informal meeting as an effective place where he could share knowledge, and he also saw the informal approach as effective since the characteristics of an informal approach suited his informal personality. He said,

I get lots of knowledge in formal discussion. We can get something that we never thought about before...when I am the speaker, I share. If not, I listen a lot and get lots of information...if I am not the speaker, I just silent. Listen carefully. In informal meeting, that is the place where I can share...because I am more informal I guess. Maybe I am the only lecturer here who wears jeans and T-shirt when teaching. Just be yourself (laugh)...the informal one is more effective. In formal meeting, I listen more. But in informal meeting, or discussion, I share a lot and also get a lot. So informal one is more effective...

Similar to the Head of Technical Study Program 1, the Head of Technical Study Program 2 agreed that the informal approach was more effective than a formal approach and that in a formal discussion, he indicated that he acquired more knowledge via this mechanism. He stated that in a formal meeting, the atmosphere was not relaxed and consequently it might result in some important ideas not being revealed. In a formal meeting, he felt reluctant to share his ideas and usually the time was limited. He noted,

Yes, I get a lot in a formal meeting...And informal one is effective, because sometimes, in a formal discussion, some important ideas, do not appear during formal sharing because the situation during formal sharing or discussion is not relaxed. The situation is formal. Or sometimes, because we are tired. We cannot sit relaxed during formal one, but in informal discussion, we can sit as comfortable as we need. Besides, sometimes in a formal discussion, we are not confident to express or share our idea. We are also reluctant. Look, the time is limited in a formal discussion and the participants are many

Nevertheless, the Head of Technical Study Program 2 added that both formal and informal approaches were important, and a formal meeting could be more effective to deliver knowledge than an informal meeting. Moreover, as one of the Middle Managers, it was easier for him to deliver the result of a meeting to his subordinates if decisions came from Top Managers. However, he also commented that the result of a formal meeting was hard to be realised or accomplished, without being followed by an informal discussion, as an informal meeting had the ability to soften the result of a formal meeting. The Head of Technical Study Program 2 explained that,

We need both formal and informal meetings. Well, the formal one is more effective. But in application, we still need the informal one. It is easy in formal meeting. We just receive from what the top management require. When I share it to my friends, it is easy. I just say, it has been decided by top management. But to implement it, I need to share it informally with by friends

in department...But as head of department, we are just the bridge. In informal meeting, it is more like, to soften the result of formal meeting. For example, we cannot accept more students, but the government demand that. So we just informally adjust that demand by providing more lecturers and classrooms. So I think, either formal or informal sharing, both have their own advantages. Usually, people easily accept when the sharing is in informal way...

Culture had an influence on the difficulty to come to a result in a formal meeting. The Head of Technical Study programs 2 said that their culture preferred an informal ethos. He admitted that an informal meeting brought him closer to his colleagues. He went on to say that the casual nature of the informal approach fitted the culture, which implied more casual communication in order to avoid hurting another's feelings. He stated,

I get a lot from a formal meeting. But in practice, the result cannot just be applied. For example, the result of formal meeting is that all staff must be at work at 7. As a head of department, I cannot just do it. Our culture is still not too formal. In informal meeting, I also get a lot, but not only that in informal meeting, I become closer to my colleagues. Related to the new rule, I just informally say to them, guys don't forget you have a class tomorrow at 7. Don't be late. If I just applied the rule from that formal meeting with top management, I just cross the names who are late, my friends will get hurt. Not good for me...informal meeting makes me closer to my friends because it has something to do with our culture. Our culture that requires soft interaction or approach. It requires soft communication. With soft communication, no one will get hurt, I feel comfortable...

The discussion or meeting mentioned in the findings above referred to face-to-face interaction. Both Top Managers at RS3 concurred that IT was important, as sharing knowledge using IT was fast, they could send data, it was more practical, they could do it anywhere and at any time, and it supported them in upgrading their rank/level. The Head of Technical Study Program 1 noted that, "IT is really useful. We can send files through email...IT is very important because sharing through IT is fast, so the receivers can read the file immediately." The Head of Technical Study Program 2 added that,

IT is absolutely important. Because the data is needed. For example, the data for a research. I just retrieve it from website. Ask the author if I can use the reference. Easy. So, the use of IT is more to its practicality. I do not need to use USB. I can retrieve it anywhere I like. But not to share hardcopy. But hardcopy is still needed just in case we have fault on our IT. Hardcopy is used as evidence....We really need IT. For example, to upgrade our level. We just upload our research, data, then IT will decide our time to upgrade the level. We do not need to fuss, submitting data. It will be good if we have the system that can manage our money, income. For example, we receive money, then the data will show, from who, what is the money about, we just retrieve that. But it is just in plan. Look, our concentration at the moment is about moving location. We just moved for (a street) to here. Therefore, the funding is allocated on removal. Not IT yet. But we are working on it. It has been three years.

Despite the advantages of using IT for sharing knowledge, its use has weaknesses as well. The Head of Technical Study Program 1 admitted that not all recipients had the opportunity to check their email and, as a result, the interaction needed for sharing knowledge did not occur. He reported that,

Sometimes, not all people have opportunity to check their email. Except, like me, if I sit in my office. We play with IT a lot. But sometimes I do not have time as well. I do not have time to read email. But I am not like that. I am mobile...Yes, still very important. The weakness is only that through IT, the interaction does not take place when we share knowledge.

The Head of Technical Study Program 1 added that the interaction was needed for sharing knowledge. This fact made face-to-face interaction more effective to share knowledge than using IT, because during face-to-face interaction, the participants could give feedback to each other to create a discussion and the participants would find out if the knowledge shared was correct and applicable. He revealed that,

Direct interaction is more effective though. Through direct interaction is better to accommodate knowledge sharing...Because it can be two ways discussion. We can give feedback directly. If we share through IT, email for example, sometimes it is just for reading. No argumentation. It will be better if there is a discussion. Discussion is important because maybe the information we have got from our training is not completely correct. This is an education world. There are many clever people here. So, face-to-face two ways discussion is very important...Discussion is an important way to develop ourselves...Through discussion, we will find out if our knowledge is correct. How the correct one is. There is a development of knowledge and knowledge exchange there. To make the knowledge comprehensive...

The Head of Technical Study Program 2 subscribed to the fact that certain topics needed discussion, or could not be explained through email. People understood the topic better during face-to-face interaction. He added that,

Sharing through face-to-face interaction is the main one since not all of the topic can be discuss through written form. For example, there is a beautiful woman. What kind of beauty? What about according to B? Every person has different version of beauty. We cannot explain it through email because the explanation will not be as detailed as the explanation in face-to-face interaction. People can understand better during face-to-face interaction because people see things from different angle. Different focus. Sometimes we cannot express them in written form. Our understanding on certain issue is different. We need to interact, we need to share the different things because sharing different things will advance our knowledge...

Summary

Middle Managers at Research Site 3 shared knowledge in the area of *Tridharma*, such as teaching material, research methods, and dedication to the community, and in the area of Professional Development Programs such as PDP

results, reports, material, and information. They also shared knowledge related to academic affairs, current affairs, management, expertise, information to stakeholders, and Institutional data.

The Middle Management participants shared: individual and collective tacit, and explicit knowledge such as: tacit individual semantic, declarative, episodic, and collective semantic, episodic, and periodic types of knowledge. They also shared explicit individual semantic, declarative, episodic, and collective semantic, episodic, and periodic types of knowledge such as academic affairs (syllabus). Table 7.5 describes the types of knowledge shared by Middle Management.

The knowledge created through sharing knowledge by Middle Managers was through socialisation, externalisation, combination, and internalisation. The knowledge was mainly created through combination.

Both Middle Managers deployed formal and informal knowledge sharing approaches, which depended on what knowledge was shared, who the recipients were, and the effectiveness of the approach. A formal approach was assumed to be quite effective as more knowledge was gained through this method. However, influenced by personality and culture, the informal approach was shown to be more effective than the formal approach. Accordingly, face-to-face interaction was believed to be more effective during knowledge sharing.

7.1.3. Knowledge Shared by Lecturer-Unit Participants

The section below illustrates the findings on what knowledge is shared by Lecturer-Unit participants at RS3. The participants in this section are Lecturer-Unit 1 and Lecturer-Unit 2. Lecturer-Unit 1 was active in a unit and Lecturer-Unit 2 was active in the Technical Department's unit/warehouse. After the data on what knowledge is shared by Lecturer-Unit participants at RS3, the presentation on the findings is followed by what types of knowledge are shared, how the knowledge is created by the Lecturer-Unit group, and what approach they use when they share knowledge.

Lecturer-Unit participants at RS3 shared knowledge related to their duty as lecturers and members of a unit. The knowledge they shared was in the areas of *Tridharma* such as teaching material, research methods, and dedication to the community. Both Lecturers-Unit shared Professional Development Programs knowledge such as reports, material, results, and information. They also shared knowledge in the areas of classroom management, feedback, academic affairs, expertise, administrative documents, books, student issues, and current affairs.

Table 7.3 presents findings of the knowledge shared by lecturers who are members or active in a unit /warehouse at RS3 (Lecturer-Unit).

Table 7.3

Knowledge Shared by Lecturer-Unit Participants at RS3

Lecturer-Unit 1		Lecturer-Unit 2	
Types of knowledge shared	What knowledge is shared	Types of knowledge shared	What knowledge is shared
Tridharma	Teaching material	Tridharma	Teaching material
	Research Methods		Conducting research
	Dedication to community	Professional development Programs	PDP reports
Professional Development Programs	PDP reports		PDP result/key points
	PDP results/key points	Expertise	
	PDP material	Administrative documents	
	PDP information	Books	
Classroom management		Student issues	
Feedback		Current affairs	
Academic affairs			
Unit's service			

Table 7.3. demonstrates that participants shared a variety of knowledge. Lecturer-Unit 1 admitted that as they were lecturers, she usually shared knowledge related to *Tridharma*. She said, “Basically, as a lecturer, I share knowledge related to *Tridharma* with my colleagues” Related to the *Tridharma* area of knowledge, Lecturer-Unit participants shared knowledge such as teaching materials, conducting research, and sharing knowledge with the community. They also shared knowledge related to the Professional Development Programs they attended, including reports, materials, results, and information. Lecturers-Unit shared teaching material in KBK (expertise group). KBK was an expertise group in which lecturers who taught similar subjects were placed. The sharing was usually in the form of collaboration within the group. They shared teaching material with colleagues in KBK as at RS3, one subject might be taught by more than one lecturer. Lecturer-Unit 1 explained that,

I also share teaching modules, or what kind of assignment I give to my students. I share them with my friends. Well, because one subject is usually taught by more than one lecturer. Not only with similar group lecturers, I share with other lecturers as well, because one subject is usually connected to other

subjects. Therefore, we need to do sharing. I share with the head of study program.

Collaboration was also the technique used by Lecturers-Unit for sharing knowledge related to research methods and dedication to community. Moreover, Lecturer-Unit 1 also shared knowledge related to dedication to community by sharing information about that topic with her colleagues. They explained that, “for dedication to community, we need to collaborate with other friends as well, we cannot do it on our own. We need our students' support too”.

For the Professional Development Programs, Lecturer-Unit participants shared the PDP reports, materials, results, and information. Lecturer-Unit participants explained that they must submit a report after attending a PDP. The material from the PDP was also attached to the report, especially when it was a workplace-funded PDP. Lecturer-Unit 2 observed,

We report how the funding was allocated, attach the material too. But sometimes if it is the department that give us the duty to attend a PDP, then report must be submitted to head of study program. Then maybe it will be submitted to the Director's Assistant for Academic Affairs.

Lecturers-Unit also shared the material from a PDP they had attended with their colleagues informally. Meanwhile, the key points they attained from PDPs were shared, not only with their colleagues, but also with their students. Lastly, the information on PDPs was shared informally with their colleagues as was explained by Lecturer-Unit 1.

Lecturer-Unit 1 at RS3 shared knowledge in the areas of classroom management, feedback, and academic affairs. Lecturer-Unit 1 gave feedback to her colleagues in order to improve the teaching and learning process in classrooms. The feedback was also stated in a formal discussion or meeting. Similar to the sharing in a formal meeting by giving feedback (related to the topic), in the area of academic affairs Lecturer-Unit 1 shared this information formally and informally with her colleagues.

Lecturer-Unit 2 at RS3 shared knowledge in expertise, administrative documents, books, student issues, and current affairs . The expertise was shared with his colleagues formally, at a forum at RS3 and could also be shared informally. Regarding administrative documents, Lecturer-Unit 2 shared Standard Operational Procedure (SOP) with his colleagues in the form of softcopy files. He shared books in softcopy form as well with his colleagues. He explained that he used to share the books in hardcopy but has recently provided them in softcopy form. Another area

of knowledge he shared was student issues and current affairs. Both areas of knowledge were shared informally with his colleagues.

Formal and Informal Approaches

This section describes the approach or mechanism used by the members of Lecturer-Unit group at RS3 when the knowledge sharing process took place. It also presents the rationale for the approach selected. The data from Lecturer-Unit participants at RS3 shows that the choice of approach depended on what knowledge was shared, who the recipients were, and the effectiveness of the approach chosen to share knowledge. This segment also presents the findings on the reasons why an approach used was more effective over another.

The presentation of the findings in previous sections describes the approach used by Lecturer-Unit participants at RS3, which could be either by a formal or informal approach. As mentioned earlier, the approach selected depended on what knowledge was shared. The data showed that the knowledge in the *Tridharma* area of knowledge such as the knowledge related to teaching material, research methods, and dedication to community (community service) were shared formally with their colleagues and with students during the teaching learning process in the classroom. The data presented earlier explained that the Lecturer-Unit participants at RS3 shared teaching material in a formal meeting, such as in a KBK during a formal KBK meeting. In this meeting they collaborated or shared ideas in order to create or design teaching material as the subject was taught by more than one lecturer.

For knowledge sharing related to research methods and dedication to community, Lecturer-Unit participants also collaborated with their colleagues, such as Lecturer-Unit 2 who managed the final report system for students with his colleagues. Moreover, Lecturer-Unit 1 stated that she collaborated with her colleagues to share knowledge related to research methods. These processes were by formal forms of approach used to share knowledge.

Regarding Professional Development Programs Lecturer-Unit participants at RS3 shared PDP reports formally with their supervisors as there was a regulated requirement to submit a report after attending a PDP. Lecturer-Unit 2 reported,

After that, we had to submit a report to the institution. To the finance department usually. We report how the funding was allocated, attach the material too. But sometimes if it is department that give us the duty to attend a PDP, then report must be submitted.

Meanwhile, the sharing of PDP results or key points, material, and information were conducted informally, since there was no rule to share the key

points/results, material or information. Lecturer-Unit 1 explained in the previous section that the sharing of the PDP material was not regulated, and was therefore, informal. She just put the material in the department' cupboard. Lecturer-Unit 1 said that, "I share document. Usually training modules, the hardcopy. My friends can borrow it. I put it in study program cupboard. There is no procedure for sharing documents. If they need the document, they can borrow it. It is in the cupboard."

Knowledge in the areas of feedback, academic affairs, and expertise was shared formally. Lecturer-Unit 1 mentioned earlier that she gave feedback in formal meetings. Knowledge of academic affairs was also shared formally in department meetings as reported by Lecturer-Unit 1. Nonetheless, expertise in areas of knowledge was shared both in formal and informal discussions. Lecturer-Unit 2 said that he shared his expertise normally in a formal forum. The informal discussion took place as the formal forum was only held once a year. Consequently, they set their own discussions informally to share his expertise (and other colleagues' expertise).

Lecturer-Unit participants at RS3 shared knowledge informally in the areas of classroom management, administrative documents, books, student issues, and current affairs. Lecturer-Unit 1 noted that, "Most of the sharing is actually informal..." They did not set special times or a place when they shared knowledge related to these areas of knowledge. They also shared this knowledge in soft copy, such as administrative documentation and books.

The decision to choose a particular approach was also influenced by who the recipient was. According to both Lecturers, if the recipients were their colleagues, the approach used was usually the informal one. Lecturer-Unit 1 stated that, "I also just informally share with my colleagues. An informal discussion." Lecturer-Unit 2 added that: "for me, using IT, today, is important. Especially an engineer like me. I usually deploy email, or WhatsApp to share something with my colleagues". In the meantime, if the meeting involved Top Managers, a formal approach was generally applied as Lecturer-Unit 1 described earlier. She said,

For example, in a formal meeting, they share management stuff, regulation and policies, stuff about our students. We also share teaching material, because one subject is handled by more than one lecturer. Top management or middle management share about organizations in this polytechnic...

The effectiveness of the approach used as a method to share knowledge was also taken into consideration when choosing between formal and informal

approaches. According to Lecturer-Unit 2, a formal approach was scheduled, while an informal approach could be anytime. He recounted that,

The formal meeting at department usually coordination meeting. Twice in one semester. *Yudisium* as well. Or a formal meeting set because of urgency. We have that every three or six month. We do not have schedule for informal meeting. Lunch time, break time, or after Friday pray, we have a habit to gather...

Both Lecturer-Unit participants agreed that at formal meetings they obtained significant amounts of knowledge. However, Lecturer-Unit 1 admitted that she received a substantial amount of knowledge in an informal meeting as well. She recalled that, "In a formal meeting, we get a lot of information regarding to policies...I get a lot of knowledge in informal meeting too..." Correspondingly Lecturer-Unit 2 believed that he received substantial amounts of knowledge from a formal meeting. Yet, he stated that he was not sure if he could share significant quantities of knowledge in a formal meeting. He observed,

Well, with formal meeting, I receive a lot of knowledge. We get information by attending a formal one. We have workshop here, every two months. We use that opportunity to discuss things. But whether or not I can share a lot, it is relative. In workshop, we have time constraint...

In contrast, Lecturer-Unit 1 considered formal meetings provided opportunities for her to share knowledge, even though she also admitted that the opportunity to share was not as great as the knowledge she attained during the formal discussion. She reported,

We can also give feedback. So everybody will have chance to share. Other people also give feedback for my opinion. If it is related to my job as a coordinator, I share the information...However, we get more knowledge than the opportunity to share. Not in an informal discussion...

The opportunity to share knowledge is a weakness of the formal approach along with the limited frequency and unrelaxed atmosphere of formal meetings. Lecturer-Unit 1 reported, "In my department, the formal meeting is at least twice a semester. But sometimes we have special meeting for example, regarding to curriculum. But for informal meeting, we do not have the schedule. It just happens naturally." An informal approach was viewed as more relaxed and it could be conducted at any time. Lecturer-Unit 2 added that,

In an informal meeting, I feel relaxed. With a formal meeting, it has a schedule while in an informal one, we can set a discussion or talk anytime we meet. I get a lot in informal meeting too. Maybe at lunch time. I do not talk a lot in a formal meeting even though I know the topic. I tend to listen more. Maybe from other speakers, sometimes what they say, answering my question at the same time. Besides, again, not all of us can talk in a formal meeting because of time. Short time...

Lecturer-Unit 1 counted a formal approach as a more effective approach than the informal approach, while Lecturer-Unit 2 thought that both approaches were effective despite weaknesses. She believed that in a formal meeting the participants had prepared themselves for the topic of discussion. She assumed a formal meeting provided an opportunity to share knowledge with Top Managers. She noted that,

The formal discussion is more effective. When we invite friends or a formal discussion, they usually have prepared themselves about the topic to be discussed. ...in an informal discussion, it is just chatting...For formal discussion, management provide the funding. But not for informal discussion. Management usually get involved in a formal meeting. It is quite effective because the management also listen to what the subordinates discuss or share. Not in the informal one.

For Lecturer-Unit 2, both approaches were effective as they depended on the receivers. He acknowledged that the discussion in a formal meeting was more focused. He stated,

both formal and informal opportunities are effective. It depends on the receivers. But for sharing, especially expertise sharing, I prefer the formal meeting. More focused. I attend the formal meeting at institutional level as well. I attended many formal opportunities outside institution...it is about accessibility and speed. So I think, which one is more effective, using IT or face-to-face interaction, I think it will depend on the need. If we need to discuss knowledge, and the discussion is well developed, we stick to face-to-face interaction. If we can meet face-to-face...

He stated that IT was the choice if the giver and the receivers of the knowledge were located at a distance to each other. He added,

But if because of distance for example so that we cannot meet, IT helps a lot...For example, if I am away, attending training in Makassar for example, I used email to share something to my colleagues here. It is more effective using email. I could not come back here to share the data, and back to Makassar to continue my training. So IT helps us a lot.

For these reasons, Lecturer-Unit 2 considered both IT and face-to-face interaction were effective for sharing knowledge. He recalled that, "both IT and face-to-face interaction are effective, I guess. It depends on the need... it is easier to share knowledge related to my expertise to my colleagues in department, because we come from similar educational background. It does not matter if I share it through IT or face-to-face."

The formal and informal approaches presented above referred to face-to-face interaction. The effectiveness of the use of IT or face-to-face interaction for sharing knowledge depended on the type of the knowledge (tacit or explicit), and the distance between giver and recipients. For sharing information that included an attachment or data, they used IT. Lecturer-Unit 1 mentioned that, "IT is used only to

share information. For example, for information about training. I use email”.

Lecturer-Unit 2 preferred to use face-to-face interaction for sharing tacit knowledge where a discussion was needed. He said that,

...it is about accessibility and speed. So I think, which one is more effective, using IT or face-to-face interaction, I think it will depend on the need. If we need to discuss knowledge, and the discussion is well developed, we stick to face-to-face interaction. If we can meet face-to-face...

However, even though Lecturer-Unit 1 used IT for sharing, she acknowledged that face-to-face interaction was more effective for sharing knowledge because she met her colleagues face-to-face almost every day. Moreover, through face-to face interaction, she received feedback from the recipients. She recalled that,

Face-to-face interaction is more effective than sharing knowledge through IT. It is because not all of my sharing needs IT. We meet almost every day here. So we communicate to each other, interact to each other...To share knowledge, or to have discussion, we just chat. But after attending a training for example, I prefer to share face-to-face. That way, we will get feedback from friends that in the end will advance my knowledge about the topic. It is also good as a reminder when we discuss it face-to-face...

Summary

Lecturer-Unit participants at RS3 shared knowledge in the areas of *Tridharma*, Professional Development Programs classroom management, feedback, academic affairs, expertise, administrative documents, books, student issues, and current affairs.

The Lecturer-Unit participants at RS3 shared tacit and explicit types of knowledge, both individual and collective. Tacit individual could be semantic, episodic, and declarative, while tacit collective knowledge could be semantic and episodic. Explicit individual knowledge could be semantic, episodic, declarative, and periodic while explicit collective knowledge could be episodic and periodic.

The knowledge in the organisation created by Lecturer-Unit participants was through socialisation, externalisation, Combination, and internalisation. The knowledge was created mainly through socialisation.

Lecturer-Unit participants shared knowledge through both formal and informal approaches. The choice of approach depended on content and the type of knowledge shared, who the recipients were, and the effectiveness of the approach used for sharing knowledge.

7.1.4. Knowledge shared by Lecturer-Teaching Participants

This section presents the data on what knowledge is shared by Lecturer-Teaching at RS3. Both Lecturer-Teaching participants are Lecturers who teach subjects in one of the departments. Their main activity is teaching or lecturing. They may have other projects but they mainly teach subjects based on their expertise.

Both Lecturer-Teaching participants shared knowledge related to *Tridharma*, such as knowledge related to teaching materials, research methods, and dedication to community. They also shared knowledge in the area of PDP, for instance submitting a PDP report, discussing key points of a PDP, and sharing PDP material with their colleagues. They shared knowledge in the areas of academic affairs and student issues. Lecturer-Teaching 1 shared knowledge in the areas of knowledge documentation (data), expertise, and current affairs. Lecturer-Teaching 2 shared knowledge in the areas of knowledge administrative material and classroom management. The findings for knowledge shared by Middle Managers at RS3 are presented in Table 7.4. below.

Table 7.4

Knowledge Shared by Lecturer-Teaching Participants at RS3

Lecturer-Teaching 1		Lecturer-Teaching 2	
Types of knowledge shared	What knowledge is shared	Types of knowledge shared	What knowledge is shared
<i>Tridharma</i>	Teaching material	<i>Tridharma</i>	Teaching material
	Conducting research		Research Methods
Professional Development Programs	PDP results/key points		Dedication to Community (Community Service)
	PDP report	Professional Development Programs	PDP reports
Academic affairs			PDP material
Student issues			PDP key points
Document		Academic affairs	
Expertise		Student issues	
Current affairs		Administrative material	
		Classroom management	

Lecturer-Teaching 1 shared knowledge related to teaching material by sharing hardcopy materials or in sharing ideas in an informal discussion. She shared because one subject was taught by more than one lecturer. She said that, "For English lecturers, we do not have formal meeting for this kind of sharing. In that

informal meeting, we share hardcopies of material, then we discuss what we are going to do, what the activities are". Similar to Lecturer-Teaching 1, Lecturer-Teaching 2 shared teaching material by collaborating with other lecturers who taught similar subjects. She also shared knowledge because more than one subject is taught by more than one lecturer and the material must follow the SAP (*Satuan Acara Pengajaran*). The SAP is a guideline per meeting for classroom teaching which may contain the name of the subject, credit for the subject, meeting hours, the objectives of the subject both general and specific, the topics and sub-topics discussed, the description of how topics will be conducted and presented in the classroom, followed by how the topic will be evaluated and the references used. Lecturer-Teaching 2 stated, "So there are groups of lecturers who teach similar subjects, such as lecturers who teach analogue subject are in the same group.... We collaborate together. Do the sharing from designing the teaching material..."

Sharing of research methods was conducted by collaborating with other lecturers in a team. They shared information with each other in order to avoid misunderstanding. Lecturer-Teaching 1 reported, "I share this to avoid misunderstanding, to be more organised so we know who will be the leader..." However, according to Lecturer-Teaching 2, the head of the research team and of the community service team are those who share. It is their job to share information with others. She explained,

For sharing research methods, it is usually the head of the team who shares. Community service too, the head of the team that share information to others. If I am the head of the team, we share information from DIKTI, and stick information on the announcement board. The leaders usually will send an SMS saying that there is new information from DIKTI on the announcement board.

Lecturer-Teaching participants at RS3 shared knowledge of Professional Development Programs as presented in Table 7.4. They submitted PDP reports to their supervisors. The reports were stored in a special room so that other lecturers could borrow them if they needed, or they shared their reports with their colleagues if they asked for them. The material from a PDP they attended was also shared with their colleagues. Both Lecturer-Teaching participants shared key points of PDPs. Lecturer-Teaching 1 shared it formally in a formal meeting while Lecturer-Teaching 2 shared the key points of a PDP she had attended informally with her colleagues.

Lecturers-Teaching shared knowledge in the area of academic affairs and student issues. When Lecturers-Teaching shared knowledge in this area, Lecturer-Teaching 1 discussed information on the curriculum in a meeting, whereas Lecturer-Teaching 2 discussed the format and content of questions for their students' final

test, or the training for designing curriculum. She shared academic affairs in a formal meeting. Formal meetings were also used by Lecturer-Teaching 1 for sharing knowledge in the area of student issues. The topic of student marks was among the topics discussed when they shared knowledge in the area of academic affairs.

As illustrated in Table 7.4. Lecturer-Teaching 1 shared knowledge in the area of documents/data, expertise and current affairs. Lecturer-Teaching 2 shared knowledge in administrative material and classroom management. When Lecturer-Teaching 1 shared knowledge in documents/data, she just uploaded the data to the RS3 website, however when she shared her expertise, she did it through an informal discussion with her colleagues who held similar expertise, given they also taught similar subject materials. Related to the current affairs area of knowledge, the topic of her discussion with her colleagues was about family. Meanwhile, Lecturer-Teaching 2 shared information about filling out forms and classroom management with her colleagues.

Formal and Informal Approaches

This segment illustrates which approaches or mechanisms are used by Lecturer-Teaching participants at RS3 during the knowledge sharing process. The approaches used during knowledge sharing could be formal or informal. The findings also showed the rationales of using an approach, dependent on what knowledge was shared and the effectiveness of the knowledge.

The formal approach was applied when they shared knowledge related to research methods, community service, PDP reports, PDP key points, academic affairs, and student issues. Knowledge related to research methods and community service was shared through collaboration in a team. The activities such as training provided for the community were led by a team leader. The sharing of PDP reports was conducted formally, because there are regulations that underline the need for submitting a PDP report after the employee's attendance at a Professional Development Program. For sharing knowledge related to a PDP key points, Lecturer-Unit 1 shared this formally as her own opinion, as her colleagues would not be interested if she shared it informally. She explained that, "I do not really share it (the PDPs key points) informally because not many of my friends are interested or want to know about the training I had attended. So there is no personal interest to know more. But they are interested in the formal one because they will get certificate for certification". Lecturer-Teaching 2 added that if there was urgency for the results of the training to be circulated, a formal meeting would be set up. She

noted that, "If it is an urgent topic to be discussed, we also set a formal meeting. Such as when we set the 2014 curriculum. From DIKTI. We invited all of the lecturers." Academic affairs and student issues were shared in department meetings. These meetings were held at least twice each semester. In these meetings they discussed the curriculum or student marks. Knowledge related to PDP key points and student issues could also be shared informally. Lecturer-Teaching 2 commented that,

After attending a PDP I shared the PDP key points, such as some key points from DIKTI. I also shared the PDP material. Among lecturers who also joined the training, I shared ideas in small discussion. Just informal discussion. Small discussion.

An informal approach was also deployed when they shared knowledge related to teaching material, documents, expertise, current affairs, administrative material, and classroom management. According to Lecturer-Teaching 1, she shared knowledge related to teaching material informally since there was no formal meeting set (by the institution) to discuss ideas surrounding the teaching material. She mentioned that, "For English lecturers, we do not have formal meeting for this kind of sharing".

As mentioned earlier, the effectiveness of the approach might influence the choice of the approach used to share knowledge. Lecturer-Teaching 1 believed that a formal approach was effective from the point of view that the number of recipients was significant. She stated, "I think the formal meeting is more effective than the informal one. More effective here means that more people attend the discussion. The participants are more focused." Meanwhile, Lecturer-Teaching 2 considered an informal approach as the most effective approach and she may for example share knowledge through email. Furthermore, she felt closer to recipients and understood the topic better in an informal meeting. She commented, "I think the informal meeting is more effective than formal discussion. Well...because, I feel relaxed in informal meetings...I often share knowledge through email...I feel closer to recipients in informal meetings...In informal meetings, the message is comprehended..."

However, even though Lecturer-Teaching 1 believed that the formal approach was more effective, she also admitted that she was not sure if more participants could share knowledge, as she commented that in a formal meeting, she felt that the sharing was only one way. She reported that, "Usually only one person shared. In informal discussion, there will be two ways interaction." She added that for herself, being a junior or young lecturer might affect her intention to share in a formal

meeting, as there was a gap between junior and seniors at RS3. Lecturer-Teaching 1 recalled that, "In a formal discussion, it will be one way. Well, you know, as government employees, there is gap between seniors and juniors. Seniors would not like being upstaged..." Along the lines of other participants such as Lecturer-Teaching 1 immediately preceding and Lecturer-Teaching 1 at RS2 (page 147), a similar comment came from Lecturer-Teaching 2 regarding the gap between senior and junior lecturers. The juniors-seniors gap influenced her willingness to share knowledge in a formal meeting. Moreover, she did not have significant opportunities or invitations to attend formal meetings as she was a junior at RS3. She elaborated that,

In a formal meeting, I feel awkward. Well...I am new here. I am also the youngest one. So I find it a bit difficult to express my ideas...well, I am still a junior here. So I do more informal discussion. The invitation for formal meetings, usually, for seniors. Well, I got the invitation to attend a formal meeting too...

Both Lecturer-Teaching participants agreed that utilisation of face-to-face interaction was more effective during the knowledge sharing process. The findings in section 7.1.4 asserted that the interaction of formal or informal meetings during the knowledge sharing process might be through face-to-face or using IT. Lecturer-Teaching 1 acknowledged the influence of IT in the daily life of an academic institution.. She remarked that,

IT is very important to support knowledge sharing. Many people have smart phones at this moment. In my opinion, people are not really interested in reading documents. Especially if the document is hundreds of pages. Maybe they prefer to open a website. We have P3AI website soon. In (RS3) website I mean. I will just upload the document and they just click on it. I think they will like it better that way. Hardcopy is not popular here. It is a trend to utilise IT. May be it is the time, a trend? We can access the information anytime anywhere

Despite the extensive use of IT today, Lecturer-Teaching 1 did not view IT as a better technique for knowledge sharing. She considered face-to-face interaction as a better technique for sharing knowledge. She articulated,

I think face-to-face interaction is more effective to share knowledge. This is just based on my experience. Maybe because so far, when I share knowledge with my friends, face-to-face interaction seems to be more effective. We understand better that way. I myself do not mind using IT. But it seems for the recipients, they comprehend better when we meet face-to-face. Maybe it is because of their characters. Also, because some of them do not get used to internet communication or interaction. Sometimes I offered to my friends to send the information through email but they refused. They preferred if I deliver the information face-to-face so that they can ask me if there things they need me to clarify. That is when I share knowledge based on my recipients' perspective. But for my own perspective, through IT is more effective because I can share the

information to many people at the same time. If the interaction is face-to-face, maybe I can only deliver the information to one person

Lecturer-Teaching 2 agreed that sharing knowledge through face-to-face interaction was more effective than sharing knowledge through IT. She recounted that, "Face-to-face interaction is more effective than sharing knowledge through IT. Because we can see their body language. We can understand better. Meanwhile, we can't see this in email interaction. Email just for sending data."

Summary

The knowledge shared by Lecturer-Teaching participants at RS3 was in the areas of *Tridharma*, Professional Development Programs, academic affairs, student issues, documentation, expertise, current affairs, administrative material, and classroom management. The knowledge shared in the *Tridharma* area of knowledge was teaching material, research methods, and dedication to community, while the knowledge shared in the area of Professional Development Programs was PDP reports, key points, and materials.

The types of knowledge shared by Lecturer-Teaching participants were both tacit and explicit. For tacit knowledge, they shared individual semantic, declarative, episodic, and procedural knowledge while for collective types of knowledge they shared semantic and episodic knowledge. For explicit knowledge, Lecturers-Teaching shared individual knowledge which included semantic, declarative, and episodic, whereas for explicit collective knowledge they shared semantic and periodic knowledge. The knowledge created by Lecturers-Teaching was through Socialisation, Externalisation, Combination, and Internalisation. The knowledge in the organisation was mainly created through Socialisation. Both Lecturer-Teaching participants used formal and informal knowledge sharing approaches. The option of the approach depended on what knowledge was to be shared and the effectiveness of the chosen approach for sharing knowledge. Both Lecturer-Teaching participants agreed that an informal approach was more effective for sharing knowledge, and that face-to-face interaction was a better technique employed for the sharing of knowledge.

7.2 . Within-Case Analysis Research Question 1

Table 7.5. details the similarities and differences in what knowledge is shared by participants at RS3. All participants shared knowledge related to PDP. Middle

Managers, Lecturers-Unit participants and Lecturer-Teaching participants all shared all of the areas of Tridharma.

Table 7.5

Knowledge Shared by Participants at RS3

Area of knowledge	What knowledge shared	Participants			
		Top Manager	Middle Managers	Lecturer-Unit	Lecturer-Teaching
<i>Tridharma</i>	Teaching material		√	√	√
	Research methods		√	√	√
	Dedication to community		√	√	√
PDPs	Reports	√	√	√	√
	Key points [from PDPs]	√	√	√	√
	Materials [from PDPs attended]	√	√	√	√
	Information	√	√	√	
	A colleague's PDP reports	√			
Recommendations/ advice/ feedback[such as related to a polytechnic's commencement date, how subordinates could improve themselves]		√		√	
Participation (in a meeting)[during a formal meeting in the institution, a director normally gets involved in the topic discussed, opens a discussion, becomes one of the speakers]		√			
Information		√			
Policy		√			
Administrative issues		√		√	√
Report (on an event from the First Director Assistant to the Director)		√			
Management			√		
Academic affairs			√	√	√
Current affairs			√	√	√
Expertise			√	√	√
Information for stakeholders			√		
Institutional data			√		
Classroom Management				√	√
Books				√	
Students' issues				√	√
Documents					√

Notably the Top Manager at RS3 did not share knowledge about teaching materials, research methods or dedication to community. This differed from the other two Top Managers from the other two research sites. The Top Manager did, however, participate in meetings, share information in a mailing list [did not specify what the information is about] as well as a policies and a reports (on an event from the First Director). Recommendations, advice and feedback were shared by both Top Management and Lecturers Unit. They also shared knowledge related to administrative affairs as did Lecturers Teaching. Middle Managers shared information involving aspects of management, information for stakeholders and institutional data. Academic affairs, current affairs and expertise were all shared by Middle Management participants, Lecturer-Unit participants and Lecturer-Teaching participants. Classroom management and student issues were shared by Lecturer-Unit participants and Lecturer-Teaching participants whereas books were shared only by Lecturer-Unit participants, and documents were only shared by Lecturer-Teaching participants.

Top Management did not share any aspects of *Tridharma* at Research Site 3. Reports and key points from PDPs, and materials related to PDP, were shared by all, however, information from PDPs was only shared by Top Management, Middle Management and Lecturer-Unit. Top management also shared a colleague's PDP reports.

All participant groups at RS3 shared knowledge formally and informally. The choice of the approach used by Top Managers, Middle Managers, Lecturers-Unit group and Lecturers-Teaching group depended on what knowledge was shared and how effective the approach deployed was during the knowledge sharing. Knowledge where the sharing was regulated such as PDP reports, dedication to community, or research methods was normally shared formally, while knowledge, for example: current affairs, information or data was shared informally.

Top Managers, Middle Managers and Lecturer-Unit participants had other factors which determined their choice of approach. Only Lecturer-Teaching participants claimed that when they chose the approach to share knowledge the major deciding factors were merely what knowledge was to be shared and what approach was most likely to be effective. Top Managers, Middle Managers and members of the Lecturer-Unit group, when selecting the approach to share knowledge, based their decision on who the recipients were. If the recipients had a higher rank than them, they used a formal mechanism for sharing knowledge with

the recipients. Top Managers were also influenced by what types of knowledge was shared (tacit or explicit knowledge).

The effectiveness of the approach was also taken as one of the considerations for choosing which approach to share knowledge. Top Management participants stated that a formal approach was more effective than an informal approach. They claimed in a formal discussion, the recipients were more serious. The results of a formal discussion were also accountable [as the result of the formal meeting was recorded in meeting minutes and it was usually signed by the chair of the meeting]. They added that in a government institution, a formal meeting was recommended. The members of Middle Management groups believed that an informal approach was more effective for sharing knowledge than a formal approach. Middle Managers admitted that sometimes a formal discussion was needed. However, they also realised that in this type of meeting the speakers would share substantial knowledge with the recipients who in turn would gain extensive knowledge. They believed, however, an informal mechanism was a more effective approach for sharing knowledge as the atmosphere was relaxed and knowledge sharing could be two-way.

Like Middle Managers' the Lecturer-Teaching participants acknowledged that in formal meetings, however, a greater number of participants received the knowledge. They admitted that formal knowledge sharing was only one way and it was only the speaker, usually seniors, who shared knowledge in this way. They claimed there was a gap between senior and junior staff which reduced the effectiveness of a formal approach. Furthermore, Lecturer-Teaching participants believed that senior staff would not like being upstaged. Therefore, the members of the Lecturer-Teaching group felt reluctant to share knowledge in a formal meeting. Lecturer-Unit participants considered both formal and informal approaches were effective. In a formal meeting, the discussion became more effective than an informal meeting as the participants in that formal meeting (recipients) took it seriously. The effectiveness of an informal approach for sharing knowledge was influenced by culture, it was also influenced by the benefit of using an informal discussion to circulate or discuss the results of formal meetings with Top Managers.

On the use of IT and face to face interactions during knowledge sharing, Top Managers agreed both approaches were effective as they supported each other. IT was needed to share knowledge fast. The quick sharing of data required IT as an effective conduit. However, face-to-face interaction was also required because the knowledge shared would be better understood with face-to-face interaction, the

knowledge exchange happened, the participants gave feedback, and body language supported the discussion. Face-to-face interaction was also assumed to fulfil the humanism part of knowledge sharing, which is needed in social interaction.

Meanwhile, Middle Managers, the Lecturer-Unit group and Lecturer-Teaching participants believed that face to face interaction was more effective for sharing knowledge. They admitted the importance of using IT for sharing knowledge as it is an effective fast medium for sharing knowledge which can be accessed anytime as mentioned by Middle Managers and Lecturer-Unit participants. Both Middle Management participants and Lecturer-Teaching participants mentioned that IT became less effective due to the fact that not all recipients were familiar with email. Both groups of participants noted that face-to-face interaction was more effective, as face-to-face interaction encouraged knowledge exchange as well as discussion. In sync with the Top Management participants' opinion, Lecturer-Teaching participants advised the usefulness of body language, which was facilitated in face-to-face interactions.

7.3. What are the Participants' Motivations to Share Knowledge?

This section presents the findings on what motivates the participants to share knowledge. It contains four subsections each of which illustrates four different groups of participants. Each subsection describes the findings on the motivations to share, the intrinsic and extrinsic factors of motivations to share, and the summary of findings. Tables are supplied to support the presentation of the findings.

7.3.1. Top Managers

This subsection presents the findings on what motivated Top Managers at RS3 to share knowledge. The data showed that supporting their work (developing the institution) and gaining more knowledge in return (reciprocity) motivated both Top Managers to share knowledge. Other motivations were: offering gratitude, being acknowledged, reaping tangible rewards for the institution, motivating subordinates, and maintaining self-image. To achieve the organisation's objectives, gaining reward from God (religion), building networks, and possessing the power of knowledge sharing were also motivators. Table 7.6. illustrates these motivations.

Table 7.6

What Motivates Top Managers at RS3 to Share Knowledge

The Director	The First Director's Assistant
Supporting the Director's work (to develop the institution)	Supporting the First Director's Assistant's work
Gaining more knowledge in return (reciprocity)	Completing each other (reciprocity)
Offering Gratitude	Achieving the organisation's objectives
Being acknowledged	Gaining reward from God (reciprocity)
Getting tangible reward for the institution	Building networks
Motivating subordinates	The power of knowledge sharing
Maintaining Self-image	

The Top Managers' motivation to share was to support their work (to develop the institution) and to get more knowledge in return. All Top Managers held a structural position at RS3. Therefore, they had additional requirements in their job description on top of their requirement as lecturers, to lead their institutions so they would be developed. By sharing knowledge, they believe they could encourage their subordinates to reflect upon the institution and create togetherness among them in the institution as well. This would help them to do their work and motivated Top Managers to share knowledge. The Director assumed that the institution he led was improved because he willingly shared knowledge with others and was not being 'stingy'. He clarified,

If all of us are having knowledge, we can do whatever we want. It will bring advantages for me... What happens is, we are improved, advanced. Look at this Polytechnic...(laugh). We are improving. So we cannot be stingy.

The Director and the First Director's Assistant expected the recipients would reciprocate and share knowledge with them. By exchanging knowledge, the First Director's Assistant considered he would create better knowledge as the knowledge would have been mixed or combined.

The Director shared knowledge as he was motivated by offering gratitude, being acknowledged, obtaining tangible rewards for the institution, motivating subordinates, and for maintaining his self-image. The Director shared his feedback with his subordinates who were motivated by gratitude. The subordinates shared their experience during the PDP they had attended and the Director reciprocated by giving advice to them. It was also important for the Director to be acknowledged by the recipients. He was sure he was respected, one of the reasons being that he

shared knowledge with subordinates. The Director was even convinced that he was re-elected as the Director at RS3 because he shared with others. He said, "Look at me. I have been re-elected again recently for the second time as a director because I have been sharing with everybody. From gardeners to athletes." Tangible rewards motivated the Director to share knowledge as well. However, the tangible rewards which he expected to gain were those given to him to develop the institution. The rewards could also be in the form of programs to be applied at RS3. He did not see that the tangible reward for him personally would alone be effective to motivate him to share knowledge. He stated, "No, I don't think financial reward will be effective for me. It is my opinion. For me, it is not going to work. Look, I am a leader here. My thought is not about money. It is honest..."

To inspire his subordinates and to sustain his self-image were other motivations which drove the Director to share knowledge. The Director attended the subordinates' meetings as he wanted to ensure them that they felt appreciated and motivated. He also shared knowledge in the hope that people would not judge him as miserly.

The First Director's Assistant's other motivations to share were to achieve the organisational objectives, to gain reward from God (reciprocity), to build networks, and to gain the power of knowledge sharing. The First Director's Assistant shared knowledge as he was motivated by the intention to achieve the organisation's objectives. He considered that the more people who knew the information, the more likely they would be able to achieve the goal. Moreover, he shared the knowledge as his aim was to receive a reward from God. In his religion's view, the more he shared knowledge, the more rewards he gained from God. He reported, "The most important thing is network. How to have networks with many people. Anyway, God manages our fortune. Well, sometimes they gave me more than I expected. Ten times or fifty times more than what I share". He added that the important aspect about sharing knowledge was to build networks. He had proven how the networks he formed with others created friendships with overseas colleagues. Lastly, the power of knowledge sharing motivated the First Director's assistant to share knowledge. He admitted that the law of knowledge sharing was that his knowledge would increase and this opened opportunities for him to go abroad. He noted, "I never thought that I would have opportunities to go abroad. But because I share knowledge, many people help me a lot too as a return."

Supporting the Director's / the First Director's assistant's work to develop the institution

To gain support so that they can perform their work motivated Top Managers to share knowledge. By sharing knowledge, the subordinates would also think about their institution's development. The result of the sharing would lead the Director to make decisions. As he is a leader, the Director believed that he needed to have additional knowledge. What people know, he must know too. Sharing knowledge would also make his work more effective and efficient. He articulated,

I share it [knowledge] for our development. We cannot keep the knowledge for the sake of us, our development...It is important that other members in this institution also think about a problem together. The leaders still have to make a decision. But based on the sharing. Some issues definitely need to be shared...I share knowledge. In general. A leader must, like this, other people know, I have to know it too. Other people have not known it yet, I have to have known it already...I share knowledge to director's assistants to support my work. I also share with the heads of departments. That is why, in management meeting, the director's assistant do not really ask a lot, because I have talked to them earlier. That is more effective and efficient...

The First Director's Assistant also shared knowledge motivated by his intention to improve the institution. He remarked,

I share knowledge with everybody. From the director to administrative staff. It depends on their needs. Because my main intention is how to improve this institution together. Without togetherness and commitment, it is difficult to develop this institution. It is just my opinion. Because I myself, I cannot work by myself. I can work because others help me.

Gaining more knowledge in return (reciprocity)

Top Managers at RS3 shared knowledge as they were motivated by the fact that by sharing their knowledge, they would gain knowledge from the recipients. They expected the recipients would reciprocate if knowledge was shared with them. The Director said, "We have to share that knowledge, who knows, we will get feedback..." In line with the Director, the First Director's Assistant at RS3 shared knowledge by giving feedback to other colleagues who shared knowledge with him, because they tried to compete with each other to achieve a better result. He explained,

I share back or give feedback because by sharing each other, we complete each other. Look, knowledge does not come from one side only. If we mix them, combine them, it will be better. For example, to decide the competency based progress. For example, from accounting department. If they decide it themselves, well...not enough. But if they share with who deals a lot with

competency based stuff, it will be balanced. We will be happy because we complete each other...

Offering Gratitude

The Director shared knowledge or information with his subordinates because he felt thankful that the subordinates did a good job and they shared the knowledge they had with him. He reported, "I have a thankful feeling when my subordinates share knowledge with me. Those who are delegated, will give report or share what they have got....I share back by giving advice to them sometimes. How to improve himself, and tell him that he did a good job. He represented me..."

Being acknowledged

The Director believed he gained respect from his subordinates because he shared knowledge. This reason motivated him. He stated,

Well, they share various topics with me, because I share with them and I respect them. Inevitably, they respect me, appreciate me. I do not expect their appreciation. But I gain it from them. I think the reward is being appreciated, respected...

Getting tangible rewards for the institution

The findings showed that financial reward strongly motivated the Director at RS3 to share knowledge. However, the financial reward he indicated, was not for himself. Nonetheless, the financial reward or other rewards, for instance, programs to be conducted, was the reward to be used to develop the institution he led. This was the reward that motivated him to share knowledge,

What happens here is that we give financial reward for certain events. For example, I was asked to do a job by DIKTI. When the work had been done, DIKTI rewarded me with some money as a director. It motivates me...Well, there are kinds of reward. Reward in form of money, but there is also reward, "indirect money", for example, program. That is also type of financial reward, but indirect. For example, I do something, then DIKTI gives me a reward by helping this organisation to expand its buildings just like in Japan...Well, I would rather use the money to expand the buildings or buy things to facilitate or support the development of this institution. It would be better if the reward is in form of programs or events.

Motivating subordinates

The Director considered his attendance at a meeting motivated his subordinates. He stated, "Oh yes. If I need to come, and for certain meetings, for example, IDP meeting. I am involved (in the discussion). It is good to motivate my friends. They will feel appreciated, taken care of. People are usually happy when they leaders join in their activity."

Maintaining Self-image

The Director shared knowledge as he did not want other colleagues or subordinates to consider him as miserly. He commented, "If I do not share knowledge, first, people will call me stingy (laugh)..."

Achieving the organisation's objectives

The First Director's Assistant at RS3 shared knowledge motivated by the effort to achieve the organisation's objective. He assumed that the more people in the organisation who knew about the knowledge, the better overall. He mentioned,

I share knowledge...well, if knowledge is only for ourselves, we will only reinforce ourselves. Nevertheless, in this organisation, that is not our goal. Our objective is to support the institution, the study programs. The more people know about the stuff, the better it will be for us...

Getting reward from God (reciprocity)

The First Director expected that the knowledge he had shared would be shared by the recipients. He believed that this was good from his religious point of view and he would be rewarded by God. This belief motivated the First Director's Assistant to share knowledge. He recalled that, "As I said before, the more people know, they will also share to others. From religion point of view, it is good...Well, from religion point of view, the more we share, the more we get reward from God. Especially as lecturers."

Building networks

The First Director's Assistant shared knowledge motivated by his need to build networks. He expected new networks if he shared knowledge with other colleagues: not only building a new network with colleagues at RS3, but also outside RS3. He was confident that networking was more important than financial reward. He also believed that networks would give him more benefit. He recounted,

Well, I did share knowledge a lot. There was usually no financial reward for that and I am happy...Because our motive, in an academic institution, is not merely about money. But also about networking. When we have good network with others, when we share, they do not need to pay us. We are happy to share. For me, financial reward is not important. The important thing is network...Networking is important. For example, I have been to Australia a few times, to the Netherlands, to China. There were rewards for me. I share knowledge, then the reward is I share knowledge with people abroad. I do not have friends if I do not share with. It is hard for us to cooperate with others and we might be isolated..."

The power of knowledge sharing

The First Director's Assistant shared knowledge as he knew that if he did so, his knowledge would increase. He anticipated that the recipients would reciprocate. He remarked, "When we share knowledge, our knowledge is actually increased. When we share knowledge, others will share with us too. Exchange knowledge. That is the law of sharing knowledge....."

Summary

The Top Managers' motivations to share knowledge were; to support their work to develop the institution, to get more knowledge in return , to offer gratitude, being acknowledged, to receive tangible rewards for the institution, to motivate subordinates, to enhance self-image, achieve the organisation's objectives, to be rewarded by God (religion), to build networks, and the power obtained in sharing knowledge. Top Managers' motivations to share knowledge could be intrinsic and extrinsic. Reciprocity as an intrinsic motivation could be direct or indirect.

7.3.2. Middle Managers

This section explains the findings on what motivates Middle Management participants at RS3 to share knowledge. The Middle Managers in this study were, the Head of Technical Study Program 1 and the Head of Technical Study Program 2. The motivations of Middle Managers at RS3 were: obligation (moral), gaining (more) knowledge (reciprocity), "saving memory" (health), acknowledgement (recognition), knowledge sharing power, and "having similar perception". Other motivations were relationships with recipients, supporting their work, doing good deeds (religion), and realising their ideas. Table 7.16 describes the RS3's Middle Managers' motivations to share knowledge.

Table 7.7

What Motivates Middle Managers at RS3 to Share Knowledge

The Head of Technical Study Program 1	The Head of Technical Study Program 2
Obligation (moral)	Obligation
Gaining (more) knowledge (reciprocity)	Gaining (more) knowledge (reciprocity))
"saving memory" (health)	Depositing the knowledge in one's memory (health)
Being acknowledged (recognition)	Being acknowledged (recognition)
The power of knowledge sharing	The power of knowledge sharing
Having similar perceptions [point of view]	Having similar perceptions
Relationship with recipients	Supporting the work as a lecturer
	Good deeds (Religion)
	Realising his ideas

Both Middle Managers shared knowledge because they were motivated by obligation. The sharing of knowledge was seen as obligatory, such as having to submit PDP reports to the institution since it was regulated. The Head of Technical Study Program 1 claimed, "Yes, in an official permission letter, it is said that I must make a report after attending the program". The Head of Technical Study Program 2 added that sharing knowledge could also be a moral obligation. Further motivation to share was to gain more knowledge. Middle Managers were motivated by receiving knowledge back from the recipients. Another motivation was health-related. Middle Managers did not want to save too much knowledge, as they were worried their own memory would become too full. The Head of the Technical Study Program 1 remarked, "Because I do not need to make my memory full..." Therefore, they shared knowledge to deposit it in another's brain. The Head of Technical Study Program 1 said that he even felt 'dizzy' if he did not share the knowledge as the knowledge could be 'heavy'.

Other motivators were: recognition, gaining power of knowledge sharing, and to have similar perceptions. Middle Managers felt by sharing knowledge they were respected and they were proud if they could reciprocate with their colleagues. The Head of Technical Study Program 1 stated, "I get reward when I share knowledge. Respect. People respect me". They were also convinced that by sharing knowledge they would gain more power. The Head of Technical Study Program 1 noted, "When I share knowledge, I become even more powerful..." Middle Managers shared knowledge as they believed it was important to share knowledge so they would have similar 'perceptions' [point of view] as it would benefit the students.

The Head of Technical Study Program 1 shared knowledge motivated by having a good relationship with recipients while the Head of Technical Study Program 2 shared knowledge with other colleagues as he was motivated by the need to support his work, do good deeds (religion), and to realise his ideas. The Head of Technical Study Program 1 shared knowledge, as he desired his close colleagues to understand it. Moreover, he was assured that by sharing the knowledge with them, it would strengthen their relationship. For the Head of Technical Study Program 2, sharing knowledge assisted him to do his job, especially when related to his responsibility as a lecturer. He stated,

If I do not share knowledge, I will be static. I am advanced, but not others. I create a problem for myself actually. So when I talk about that knowledge, nobody knows. Or maybe I do not have time to explain a topic, then nobody can replace me. It becomes a burden for me. Everything depends on me. I will be extremely busy. What will happen if something wrong happens to me? I do not live forever. So it becomes my burden to think about it. I cannot rest, I do not feel comfortable.

He was also confident that sharing knowledge would give him continuous good deeds and uncover an opportunity to realise his ideas.

The details of the findings on what motivated of Middle Managers at RS3 to share knowledge are presented below.

Obligation (moral obligation)

Obligation to share motivated Middle Managers. Submitting a PDP report was seen as an obligation to share, as it was a regulated responsibility. The Head of Technical Study Program 1 submitted the PDP report to the Director as it was a requirement in his official permission letter. He said, "It should be. Like in our official permission letter to join the training, it is said that when we finish the program, we must make a report. To our top management. Submitted to our director..." The Head of Technical Study Program 1 added that he shared the report with his colleagues as it was a moral obligation. He claimed, "Then I share it with my colleagues...I feel like it is my moral obligation. We share it with our friends, and usually friends give feedback." Similarly, the Head of Technical Study Program 2 shared PDP reports motivated by his obligation to submit the report after attending a PDP as regulated. He reported,

It is an obligation. Such as curriculum evaluation. Every four years. But not all training result is shared because we have limited time. So usually, a national training that we share. For local training, not so much. Because if it is local, we are the one who invite the guests or speakers...Yes, for training report submission for example. There is rule I have to submit the report to top management...

Gaining (more) knowledge (reciprocity)

The Head of Technical Study Program 1 shared knowledge motivated by that which he received from his colleagues and the fact that it potentially created discussion. He said, "I share back when my friends share knowledge with me. Likewise, that is the function of direct interaction. We receive, we share back. Create discussion." Meanwhile, the Head of Technical Study Program 2 was motivated by the expectation that the recipients who received the knowledge from him would develop the knowledge and in turn share it with him. He noted,

I feel comfortable. Let's say I share topic A with Mr. X. then when I discuss the topic, he can give feedback. It is possible he has explored that knowledge so that he can share more knowledge with me. I feel comfortable because well...it is just my character. I get used to sharing.

"Saving memory" (health)

Middle Managers at RS3 shared knowledge motivated by "saving their memory". The Head of Technical Study Program 1 shared knowledge so that he could transfer the knowledge to his colleagues' memory; in that way, his memory would not be "heavy" and he stayed young. Whenever he needed the knowledge, he just asked the recipients to share it back. Saving all the knowledge for himself made him feel 'heavy' and affected his health. He described,

When I share knowledge, I feel light. Weightless...I save it to my friends' memory. So when I need it, I just call them. 'Look I told you this back then, tell me about it again'. I just want to be relaxed. Therefore, I stay young (laugh). If something general, I just let people save it in their memory...I feel reluctant to keep knowledge as I said earlier. It is heavy [the head/brain/memory is heavy]. I prefer to share it. Feel weightless. I do not feel good because I do not share. I will also feel dizzy.

Not unlike the response from the Head of Technical Study Program 1, the Head of Technical Study Program 2 was also motivated by "looking after his memory", so that it would not be 'full'. He stated, "... look, when I share knowledge with others, one day, if I forget about that knowledge, others will remind me. It happened because, actually during knowledge sharing, I deposit knowledge to others' memory. It helps me a lot so that my memory is not full."

Being acknowledged (recognition)

Being acknowledged motivated Middle Managers to share knowledge. The Head of Technical Study Program 1 shared knowledge since he wanted people to

know him and respect him. He commented, "When I share, people will know me. If they want to be my friend, at least they know me. So our relationship will be good...I am being respected, appreciated, personally." The Head of Technical Study Program 2 was proud if he could contribute his knowledge to his colleagues. He mentioned that,

If I am discussing automotive product with a friend, for example, automotive has something to do with electricity. But he does not know at all about electricity. Just automotive. He may not know about the topic. I understand that. Then I explain it to him. I feel proud...I feel satisfied. Can't say it in words.

The power of knowledge sharing

Middle Managers believed that sharing knowledge would make them more powerful. The Head of Technical Study Program 1 described his experience when he shared knowledge in Papua. He got support from the recipients and could bring 72 new students from the area when he shared his knowledge. The Head of Technical Study Program 1 articulated that,

For example, I have knowledge which makes it possible for me to buy something. I share my knowledge until to Papua. I was the only one I guess who went there. I get the power. But I also believe I will get shot (laugh). But that is in God' hands. I share the knowledge there. I did not ask anything...Like when I shared knowledge in Papua. I got support from local government there, from British Petroleum, therefore, I can bring 72 kids from Papua to study here. I get the power as I got support from them. That is what I got from my sharing activity and informal discussion. The kids are still here. 72 of them.

The Head of Technical Study Program 2 added that by sharing knowledge he would get more power as his religion believed this to be the case. He said,

I get more power when I share knowledge. Look, in my religion, sharing knowledge means I will get more. For example, because I had discussed topic A with my friends, now my knowledge about A is A plus. My friends had shared their view as well. I get more knowledge.

Having "similar perceptions"

Having similar perceptions was one of the motivations that stimulated both Middle Management participants to share knowledge. The Head of Technical Study Program 1 argued that having a similar perception to other lecturers would benefit the students and assisted him when he could not attend the teaching in the classrooms. He explains,

My motivation is to have similar ideas or perception among lecturers, to ensure that the students understand the knowledge delivered. Moreover, to smoothen teaching learning process. So, if one lecturer cannot attend the class, another will replace him easily because we have similar teaching material.

Furthermore, the Head of Technical Study Program 2 also admitted that he had discussions with his colleagues in order to hold similar perceptions. He recounted that, “We have to have discussion so that we have similar perception. Every department has their own vision and mission.”

Relationship with recipients

The Head of Technical Study Program 1 shared knowledge because he felt close to certain colleagues and so their knowledge was broadened. He assumed his colleagues also did the same for him. He remarked,

Personally, I share knowledge because I just want to do it. Especially with my close friends...I just share. I share because I want him to know. Maybe like him. Share his knowledge so that I now about the knowledge. In term of personal relationship. We have much stronger personal relationship.

Supporting his work

Support for his work, motivated the Head of Technical Study Program 2 to share knowledge. He shared knowledge so that this would, in turn, support him to do his work. He said that,

I share back. Because by sharing, it will assist my work. It is for my own benefit and my friends. For me, for example. I teach subject A to a friends. I share knowledge related to that subject. The module maybe. So one day if I cannot attend the class, my friends can replace me temporarily. We have different subjects to teach here. If I do not share my expertise, what happen to my students if things happen? It will lighten my responsibility.

Good deed (Religion)

Similar to a comment made by the Head of Professional Unit at RS2 related to sharing knowledge as ‘doing a good deed’ in Islam faith (page 161), the Head of Technical Study Program 2 at RS3 shared knowledge as he was also motivated by his religion, Islam, and the belief that sharing knowledge would deliver one continuous good deed. He observes,

If I can give something to other people, I feel good. Especially, according to my religion, Islam, sharing knowledge will give us continuous good deed. I can make other people happy. Look, at home, I mentor teenagers. No payment. Free. I feel happy.

Realising ideas

Motivated by the intention to realise or to instigate his ideas, the Head of Technical Study Program 2 shared knowledge with his colleagues. He felt pleased as he could develop his ideas and have physical results. He reported,

For me, it is more about self-satisfaction. For example, when I was in Robotic team. I worked so hard. Day and night. But the payment was small.

That's okay. Because I feel satisfied, happy, I can implement my ideas. That is the main point.

Summary

The Middle Managers' motivations to share knowledge were: moral obligation, reciprocity, to save memory (health), recognition, the power of knowledge sharing, to have similar perceptions, relationships with recipients, to support their work, performing good deeds (religion), and to realise their ideas. Middle Managers' motivations to share knowledge could be intrinsic or extrinsic.

7.3.3. Lecturer-Unit Participants

This segment describes the findings related to Lecturer-Unit participants' motivation to share knowledge. Their motivations to share knowledge were: the power of knowledge sharing, responsibility, improving their work, because they were asked to, finding greater knowledge, recognition, and financial reward. The Lecturer-Unit participants' motivations to share knowledge are illustrated in Table 7.8.

Table 7.8

What Motivates Lecturer-Unit Participants at RS3 to Share Knowledge

Lecturer-Unit 1	Lecturer-Unit 2
The power of knowledge sharing	The power of knowledge sharing
Responsibility	Finding greater knowledge
Improving her work	Being acknowledged (recognition)
Because they ask me	Reaping financial reward

Both Lecturer-Unit participants agreed that what motivated them to share knowledge was the power of knowledge sharing itself. They were assured that the sharing they did influenced their colleagues and even the system. In the meantime, Lecturer-Unit 1 shared knowledge as she was motivated by her responsibility in her unit. She commented, "I am a training coordinator. Therefore I have to share training information..." Other motivations which motivated Lecturer-Unit 1 to share knowledge, were to improve her work and because her colleagues asked her to. For example, when she shared knowledge related to research methods, she shared the knowledge in order to improve her own research. She mentioned, "Related to sharing in conducting research, it is to improve my research. When we

do research, we sometimes collaborate with other friends” Lecturer-Unit 1 shared knowledge because the recipients asked her to.

Table 7.8 also describes what motivated Lecturer-Unit 2 to share knowledge : finding greater knowledge, being acknowledged, and reaping financial rewards. He believed that the knowledge he shared in discussions, combined with that of his colleagues’ would create a greater knowledge. Recognition or being acknowledged by the recipients was also one of the motivations for Lecturer-Unit 2 to share knowledge. When he shared knowledge, he felt that he in turn had greater knowledge. He stated, “I am happy. Well, sometimes I feel that I know better than anybody if I can share knowledge as well. I am proud.” Financial reward was also a motivating factor for Lecturer-Unit 2 and influenced him to share knowledge.

The power of knowledge sharing

Both Lecturer-Unit participants at RS3 shared knowledge with colleagues motivated by the fact that they would have more knowledge if they shared theirs with others. Lecturer-Unit 1 felt more comfortable when she shared knowledge. The sharing she did, affected the system and other colleagues. She observed,

I do not share power when I share knowledge with others, because other people will share knowledge with me... It will affect others. It will influence the system. It will indirectly affect me in the end. As the result, if I do not share, I will not feel comfortable in my workplace...

Lecturer-Unit 2 agreed that by sharing knowledge he became more powerful, because the recipients would return the knowledge. Moreover, he believed that he could remember the knowledge better when he shared it with others. He noted that,

I even get more knowledge if I share my knowledge. I become more powerful. Because when we share, our recipients will share too. We complete each other. By sharing, I can remember the knowledge better. Stronger. If I do not share knowledge, I will not be developed...

Responsibility

Fulfilling her responsibilities motivated Lecture-Unit 1 to share knowledge. She stated, “I feel normal. Like usual. Because I get used to share knowledge with others. Part of my job is to share information. My responsibility.”

Improving her work

To improve her work was one of the Lecturer-Unit 1’s motivations to share knowledge. The sharing of knowledge related to teaching material or research methods, resulted in making her teaching material and research methods better. She commented,

The sharing is for our own goodness. For example, we need information from them as well. We can find out if the material we teach is sufficient. Or, may be, we still need to develop the material more. Besides, they need my feedback too.

Because they ask me

Lecturer-Unit 1 shared knowledge because her colleagues asked her to. She mentioned, "Sometimes they (colleagues) ask me about the training I have attended. So I share what I have got, because they ask me to."

Finding greater knowledge

Lecturer-Unit 2 shared knowledge as he was motivated by having greater knowledge than that which he shared. He explained,

Because what I get is usually quite different from my colleagues'. We discuss the topic together, we make comparison from other areas, we find conclusions. Sometimes disagreements happens. What we do, we make experiment, such giving class A treatment 1, and B will get treatment 2. So we share because we would like to find a greater knowledge than the knowledge we shared...

Being acknowledged (recognition)

Being acknowledged also motivated Lecturer-Unit 2 to share knowledge with his colleagues. He did not want people to look down on him and he wanted people to think that he was knowledgeable. He recalled,

"My friends share a lot to me during our discussion. Then I share them back. Usually to fill in the gap, to contribute, or to participate. I do that because I do not want people to look down at me So if a colleague shares his knowledge, I share to, I expect he will think that I have something too."

Financial reward

Lecturer-Unit2 shared knowledge since he was motivated by financial reward. He recounted,

I get financial reward. For example, if I review research, I will get financial reward. I feel happy if I get financial reward. For example, if I have to help a company's problem. I am an assessor. Related to my expertise. I am glad because I get money. It will encourage me to share.

Summary

The Lecturer-Unit participants' motivations to share knowledge were: the power of knowledge sharing, responsibility, to improve their work, because they were asked to share, to find greater knowledge, recognition, and financial reward. These motivations could be categorised as intrinsic and extrinsic. Their intrinsic

motivations were the perceived power of knowledge and “finding greater knowledge”. Meanwhile, their extrinsic motivations were relationships with recipients, rewards, and to improve their work.

7.3.4. Lecturer-Teaching Participants

The motivation to share knowledge for Lecturer-Teaching participants at RS3 was: to unify and recognition. Other motivations to share knowledge were: because they were asked, financial reward, to save the knowledge from extinction, self-image, to avoid misunderstanding, to get feedback (reciprocity), obligation, gratitude, and the power of knowledge sharing. Table 7.20 illustrates the motivations of Lecturer-Teaching participants at RS3 to share knowledge.

Table 7.9

What Motivates Lecturer-Teaching Participants at RS3 to Share Knowledge

Lecturer-Teaching 1	Lecturer-Teaching 2
Unifying	Unifying
Being acknowledged (recognition)	Being acknowledged (recognition)
Because they ask	Receiving feedback (reciprocity)
Reaping financial reward	Obligation
”Saving the knowledge from extinction”	Offering gratitude
Maintaining self-image	The power of knowledge sharing
Avoiding misunderstanding	

Lecturer-Teaching participants at RS3 shared knowledge because they were motivated by the objective to unify the teaching material and the examination questions with other lecturers who taught similar subject material. This was so their students would receive similar treatment. The Lecturer-teaching participants felt that they needed to be acknowledged by sharing knowledge with others. Lecturer-Teaching 1 shared knowledge so that she could show her power and be a smart lecturer. She commented, “Knowledge is the source of power. When we share knowledge with someone, the recipients will think that we know a lot, we are smart. Smarter than recipients. I do not lose power. I show the power.”

Table 7.9. also describes that Lecturer-Teaching 1’s motivations to share were: because they were asked, reaping financial reward, saving the knowledge from extinction, maintaining self-image, and avoiding misunderstanding. Lecturer-Teaching 1 shared knowledge motivated by the requests made by her colleagues. She would not share if her colleagues did not ask her to share knowledge. Financial reward also attracted Lecturer-Teaching 1 to share knowledge. She also explained

that it seemed other participants, participants who attended a Professional Development Program, also excitedly followed the program if there was financial reward for them. Another motivation to share knowledge for Lecturer-Teaching 1 was to save the knowledge from extinction. She was worried if she died without sharing the knowledge, the knowledge would vanish. Lecturer-Teaching1 was also aware of “what people say about her”. Therefore, she shared knowledge as she was concerned about what people would say. To avoid misunderstanding was also one of the motivations for Lecturer-Teaching 1 to share knowledge.

Receiving feedback (reciprocity), obligation, offering gratitude, and the power of knowledge sharing motivated Lecturer-Teaching 2 to share knowledge. Lecturer-Teaching 2 shared knowledge in order to get feedback from recipients. She also understood that sharing knowledge was an obligation, that is, that the sharing of knowledge with the community was perceived as an obligation. Basically, she felt that she must share knowledge if she had it. She mentioned, “...but more than anything, if we have knowledge, we must share it.” One of the motivators for Lecturer-Teaching 2 was gratitude. If her colleagues shared knowledge with her, she would reciprocate. Finally, the power of knowledge sharing was a motivator due to Lecturer-Teaching 2’s desire to share knowledge.

Below are the details of the motivations of Lecturer-Teaching participants at RS3 to share knowledge.

Unifying

As a subject was taught by more than one lecturer, Lecturer-Teaching participants at RS3 must hold discussions with their colleagues, so that the teaching material and the examination questions were similar. The intention to unify the teaching material and the examination questions so that students would receive similar treatment motivated Lecturer-Teaching 1 to share knowledge. They remarked, “Sharing with other English lecturers, we just want to have the unified idea, because for final test in a semester, the examination questions have to be the same. We teach in the same level even though different classes.” Lecturer-Teaching 2 added, “Well, because one subject is taught by more than one lecturer. And all students should receive similar or equal lesson.”

Being acknowledged (recognition)

Both Lecturer-Teaching participants wanted to be acknowledged by the recipients. The need to be acknowledged by their colleagues motivated participants to share knowledge. Lecture-Teaching 1 said, “But sometimes I share back because I

need to show them that I know something too. That I understand the topic.”
Lecturer-Teaching 2 added, “When I share knowledge related to research methods, in form of a journal for example, then people use it as their reference, I feel very pleased. I feel that I motivate them.”

Because they ask

Lecturer-Teaching 1 shared knowledge only if colleagues asked her to share what she knew. She also noticed that not many colleagues asked her to share her information. She noted, “It depends. If they ask, then I share. But if they do not ask my opinion, well...but that happens a lot...I only share documents if they ask for them.”

Reaping financial reward

When Lecturer-Teaching 1 was asked if financial reward was important in encouraging her to share knowledge, she admitted that it was. She explained that other participants in an activity were interested more when there was a financial reward for them. She was assured that if people were interested in an activity, the sharing of knowledge would occur more often, and more people would like to participate in the discussion. The Lecturer-Teaching 1 reported,

Financial reward is very important (for me). Every time I joined seminars, and there was a little of pocket money, we said, I could see that people were excited to attend the activities. If people are excited to attend the forum, I believe that there will be more sharing taking place. There will be more people willing to participate. I can see, the last events, formal meeting, there was pocket money. And the participants were more than the events without pocket money.

“Saving the knowledge from extinction”

Lecturer-Teaching 1 was concerned if she did not share the knowledge, the knowledge would have the potential to become extinct. This motivated her to share it. By sharing knowledge, she was sure that she could preserve it. She noted, “The knowledge will be extinct if I do not share it. For example, if only me, who know, one day if I die, the knowledge will be disappeared. Too bad, isn’t it?”

Maintaining self-image

For Lecturer-Teaching 1, self-image was very important. What people would say about her was important. Motivated by keeping her fine self-image, Lecturer-Teaching 1 shared knowledge with other colleagues. She described,

Besides, if I do not share knowledge, what would people think about me? They might think I am stingy, an introvert. And for me, people’s opinion is

important. We need other people in our lives. If people do not want to be friend with us, why we live then. Useless

Avoiding misunderstanding (To keep the harmony, avoid confrontation)

To avoid misunderstanding was one of Lecturer-Teaching 1's motivations to share knowledge so that there would be no argument later on. She noted, "I share this (knowledge in research methods) to avoid misunderstanding... So when we must submit the proposal, we do not argue about those things anymore."

Receiving feedback (reciprocity)

Lecturer-Teaching 2 shared knowledge motivated by the wish to get feedback from recipients. For example, when she had a problem, she shared it, so she would get feedback as a solution for her problem. She stated, "Well, when I have problem, I share so that I will get feedback. Solution to solve my problem. A bit difficult to solve a problem alone. So I share the issue with my colleagues to get feedback."

Obligation

Sharing knowledge was viewed as an obligation. Lecturer-Teaching 2 felt obliged to share knowledge, not only with students, but also with the community. She commented that, "As a lecturer, we must share our knowledge not only with students but also with community..."

Offering gratitude

Gratitude motivated Lecturer-teaching 2 to share knowledge which was viewed as a payback for the knowledge shared by her colleagues. She articulated, "When my colleagues share knowledge with me, I share back. I think I just want to pay back what she shares. Besides, the more we share knowledge, the more people will know the knowledge..."

The power of knowledge sharing

Motivated by the power of sharing knowledge, Lecturer-Teaching 2 shared knowledge as she expected she would gain more power as the recipients would share knowledge back to her. She mentioned, "If I share knowledge I will obtain more knowledge. More power. It is like when we fill up a rain water tank. We take some out, then it will be filled up again. ...so the more we share, the more knowledge we have..."

Summary

The Lecturer-Teaching participants' motivators to share knowledge were: unifying and recognition, because they were asked, reaping financial reward, saving the knowledge from extinction, maintaining self-image, avoiding misunderstanding, to get feedback (reciprocity), obligation, gratitude, and the power of knowledge sharing. The motivations could be intrinsic and extrinsic.

7.4. Within-Case Analysis Research Question 2

What are Research Site 3 Participants' Motivations to Share Knowledge?

Table 7.10

Participants' Motivations to Share Knowledge at RS3

Motivation to share	Participants			
	Top Manager	Middle Manager	Lecturer-Unit participants	Lecturer-Teaching participants
Supporting the Director/ First Director Assistant (to develop the institution)	√			
Gaining more knowledge in return/completing each other (reciprocity)	√	√		
Offering Gratitude	√			√
Being acknowledged	√	√	√	√
To get tangible rewards for institution	√			
Motivating subordinates	√			
Maintaining Self-image	√			√
Achieving the organisation's objectives	√			
Gaining reward from God/good deed (reciprocity)	√	√		
Building networks	√			
The power of knowledge sharing	√	√	√	√
Obligation		√		√
Saving memory/depositing the knowledge in one's memory (health)		√		

Motivation to share	Participants			
	Top Manager	Middle Manager	Lecturer-Unit participants	Lecturer-Teaching participants
Having similar perceptions (point of view)		√		
Relationship with recipients		√		
Responsibility			√	
Finding greater knowledge			√	
To support lecturer's work		√		
To improve her work			√	
Because they asked me			√	√
Reaping financial reward			√	√
Unifying				√
Receiving feedback (reciprocity)				√
Saving the knowledge from extinction				√
Avoiding misunderstanding				√

Table 7.10. illustrates the motivators for sharing at RS3. Two areas, being acknowledged and the power of knowledge sharing motivated all participants. The Top Manager was motivated to support the First Director's Assistant to develop the institution, gain tangible rewards for the institution, motivate subordinates, achieve the organisation's objectives and build networks.

Both Top and Middle Managers saw gaining more knowledge and gaining rewards from good deeds as motivators to share knowledge. Offering gratitude and maintaining self-image were two other motivators for Top Management and Lecturer-Teaching participants. Middle Managers also saw saving memory, having similar points of view, relationships with recipients and supporting lecturer's work as important motivators. Obligation was a motivator for Middle Management and Lecturer-Teaching participants. Lecturer Unit participants stated that responsibility, improving her work and finding greater knowledge were among her motivators. Lecturers-Unit participants as well as Lecturer-Teaching participants shared the motivators of reaping financial reward and because they had been "asked" to share knowledge. Lecturer-Teaching participants also found that unifying, receipt of feedback, avoiding misunderstanding and saving knowledge from extinction were their motivators to share knowledge.

Chapter Summary

The findings presented showed that participants at RS3 shared knowledge relate to their obligations as lecturers, Tridharma and Professional Development Programs. They also shared knowledge related to academic affairs, student issues, documentation, expertise, current affairs, administrative material, and classroom management (see Appendix J.3 for detailed information on what knowledge is shared). Even though participants from RS3 shared tacit and explicit knowledge, but the knowledge they shared most was tacit knowledge (see Appendix K.3). Therefore, the knowledge created at RS3 was mostly through socialisation (see Appendix L.3). The participants preferred face-to-face interaction and shared knowledge in an informal meeting.

Most participants at RS3 shared knowledge as they were motivated by being acknowledged and the power of knowledge sharing. Other motivations were responsibility and obligation as lecturers. Gaining more knowledge and gaining rewards from good deeds were also motivations to share knowledge at RS3. Participants with lower rank or status in structural position found that unifying, receipt of feedback, and avoiding misunderstanding were their motivators to share knowledge as well. Their motivations were intrinsic and extrinsic (see Appendix M.3).

The following chapter presents the cross-case analysis of the data from three research sites which had been presented in chapter 5, 6, and 7. The cross-case analysis is needed in order to find similarities and differences on how knowledge sharing takes place in three research sites.

CHAPTER EIGHT : A CROSS-CASE ANALYSIS

Introduction

The findings from three research sites had been presented in the earlier Chapters 5, 6, and 7. This chapter presents a cross-case analysis, which compares the similarities and differences across three research sites. It begins with the cross case analysis of the first major research question: What knowledge is shared at state polytechnics in Indonesia, followed by the cross case analysis of the second major research question: What motivated participants to share knowledge?

8.1. Participants' Opinions on What Knowledge is Shared at Polytechnics Across Cases

The first research question sought participants' opinions about what knowledge is shared in State Polytechnics in Indonesia. The views of Top Managers across the three sites are presented first, followed by those of Middle Managers, Lecturer-Unit, and Lecturer-Teaching. The findings from each of the groups of participants are then compared. Table 8.1 displays the similarities and differences in the knowledge shared by Top Managers at the three sites.

8.1.1. What Knowledge is Shared by Top Managers at RS1, RS2, RS3

Top Managers at RS1 and RS2 shared knowledge as required by their obligations as lecturers (to fulfill *Tridharma* and Professional Development Programs) and responsibilities as illustrated in Table 8.1. The differences in what knowledge was shared by Top Managers across the sites was related to what area of knowledge they shared and the way they shared the knowledge. The reasons why they shared the knowledge were relatively different. For example, relating to *Tridharma*, even though the Top Managers shared knowledge in *Tridharma*, Top Managers at RS3 only shared knowledge related to research methods whereas Top Managers at RS1 and RS2 shared teaching materials and research methods.

Table 8.1

Knowledge Shared by Top Managers at RS1, RS2, and RS3

Area of knowledge	Knowledge shared	Participants		
		Top Managers		
		RS1	RS2	RS3
<i>Tridharma</i>	Teaching materials	√	√	
	Research methods	√	√	√ (document analysis)
	Dedication to community (community service)	√		
Professional Development Programs (PDPs)	PDP reports	√	√	√
	PDP key points	√	√	√
	PDP material		√	√
	PDP information	√		
	Other colleague's PDP reports			√
	PDP experiences		√	
Management		√	√	
Policies		√	√	√
Summary of informal meetings		√		
Current affairs		√		
Feedback/suggestions/recommendations			√	√
Sharing documents with government (DIKTI, DPR) such as engineering degrees.			√	
Religious beliefs			√	
Classroom management			√	
Participation (at department meetings & discussions)				√
Information				√
Administrative issues			√	√
Reports				√

Only Top Managers at RS1 shared knowledge related to community service. The Director shared his knowledge, as a consultant for his community, concerning workplace procedures (how to do things such as practice, tradition, or routines). He believed that the sharing of routines was really the sharing of "culture". Another area of knowledge related to the obligation as lecturers was to classroom management. Only the First Director Assistant at RS2 (also a lecturer in one of the departments at this site) informally shared information or gave advice on "how to improve the teaching process in the classroom" to colleagues in his department.

To summarise: differences existed across the three sites in the way they shared *Tridharma*. Top Managers at RS1 shared teaching handouts and modules in KBK forums (*Kelompok Bidang Keahlian* or a group of lecturers who have similar

background knowledge or expertise) or expertise forums in each department where they designed, discussed, or updated teaching materials. Top Managers at RS2 also shared knowledge in *Tridharma*. However, their way of sharing teaching material was quite different. Whereas the Top Managers at RS1 used KBK forums to share teaching material, the First Director's Assistant at RS2 shared teaching material by uploading it on RS2's website. The Director at this site did not indicate he shared teaching material. Top Managers at RS1 shared knowledge about research methods in Academic Forums, in their offices, or in the Research and Dedication to Community Unit (*Lembaga Penelitian dan Pengabdian kepada Masyarakat / LP3M*). One of the Top Managers at RS2, the First Director's assistant, shared knowledge related to research methods as well. He, however, did not share the knowledge in Academic Forums, his office, or LP3M like the Top managers at RS1. Instead, he shared his knowledge as a reviewer or at Department meetings that met about research proposals. Top Managers at RS3 did not mention how they shared knowledge about research methods, however, documents related to research methods were found when analysing documents from that site.

The reasons for sharing knowledge in *Tridharma* strongly related to Top Managers' obligation as lecturers. Sharing knowledge in Academic Forums at RS1 about research methods was viewed as important in order to develop the department's research and to obtain approval for conducting research at the institutional level. However, even though *Tridharma* was a lecturer's obligation, the First Director's Assistant at RS2 viewed sharing knowledge in *Tridharma* as one of his responsibilities as "the First Director Assistant". Top Managers at RS3 did not clarify their reasons for sharing.

With regard to Professional Development Programs, Top Managers from the three sites shared PDP reports and their key points, however, only Top Managers at RS1 said that they shared PDP information. Top Managers at RS2 reported they shared PDP experience; and only Top Managers at RS3 recounted they shared other colleague's PDP reports. Knowledge related to PDP materials was shared by Top Managers at RS2 and RS3.

Differences existed across the three sites in the way Top Managers shared knowledge from PDPs. Top Managers at RS1, RS2, and RS3 showed similarity in that they shared or submitted the PDP reports to their supervisors. Top Managers at RS1 shared key points or the "results" of PDPs they had attended either in an Academic Forum or just informally. The First Director's Assistant at RS1 shared PDPs key points with suitable recipients. For example, he shared key ideas from

accounting PDPs to his colleagues in the accounting department. The Director at RS2, unlike Top Managers at RS1 and RS2, shared key points or ideas from PDPs he had attended through discussion with his colleagues. The Director at RS3 shared key points from PDPs either informally or formally (by circulating “notes” to Heads of Departments.) Top Managers at RS2 shared the soft copy files, handouts and files they received. PDP material was also attached to the PDP reports and submitted to the supervisors (the directors or DIKTI). The First Director’s Assistant at RS2 shared the PDP material with the units which needed the material. However, the Director at RS3 shared the PDP material through a “disposition” mechanism [a technique to send information in a formatted note which usually includes an attachment].

In Summary: similarities and differences were revealed in the way knowledge from PDPs was shared across the three research sites. Top Managers from all three sites submitted a PDP report, especially when the programs were “workplace-funded”, because the submission of a PDP report was regulated. Therefore, they were obligated to do so, and according to the First Director’s Assistant at RS2 a PDP report was stated in official duty letters. The sharing of PDP key points, however, was not regulated. At RS1, the sharing of PDPs key points was considered to be the PDP participants’ responsibility. At RS2 the sharing of key points from PDPs was to find ideas which could be applied in the institution and the sharing was not regulated.

The evidence revealed that Top Managers at the sites shared knowledge related to their responsibilities as Top Managers such as matters related to management, shared policies, summaries of informal meetings, shared/gave feedback/suggestions/recommendations, documents to DIKTI, and participation in discussions at department meetings. The Top Manager at RS1 shared knowledge about management, circulated policies, gave feedback/suggestions/recommendations, and summarised informal meetings. Table 8.1 illustrates that Top Managers at RS3 did not share knowledge about management and Top Managers at RS2 did not share feedback/suggestions/recommendations. Only Top Managers at RS2 shared documents with the government (DIKTI, DPR), and only the First Director Assistant at RS3 shared reports and participated in Department meeting discussions. Only one of the Top Managers at RS1 shared summaries of informal meetings.

The way Top Managers at all three sites shared knowledge related to their responsibilities was quite different. For example, regarding management, Top Managers at RS1 shared knowledge related to organisational strategies, directions,

and organisational life in discussions in a cultural opportunity called *Pakraman* forum. The First Director's Assistant at RS2 on the other hand shared knowledge through informal discussions with the Director on sensitive topics and discussed management issues such as the development of the institution formally with subordinates. Top Managers at RS1 did not express that they shared 'sensitive management topics' like the First Director's Assistant at RS2. The Director at RS1 shared knowledge related to management and his ideas about strategies to improve RS1's performance in the *Pakraman* forum, whereas, the Director at RS2 shared knowledge in the management area in order to "evaluate" the institution's weaknesses with his sub-ordinates.

Top Managers at the sites shared policies and regulations that came from the government, using a relatively similar process. Government policies were sent to the Directors. At RS1, policies and regulations were discussed with the Director and circulated to sub-ordinates especially if they were related to academic issues. Top Management participants at RS2, in line with their "job description" or structural position, shared or circulated policies from the government to subordinates at RS2. The Director at this research site also shared his ideas related to the policies with other State Polytechnic Directors in Indonesia, whereas the First Director's Assistant shared policies related to the application of *Tridharma*, government policies and his own policies, to subordinates. By comparison, policies and regulations were shared by the First Director's Assistant at RS3 in informal meetings with subordinates.

The Directors at RS2 and RS3 made recommendations to the government (DIKTI) about the commencement date for State Polytechnics in Indonesia and advice and suggestions about how to improve subordinates' work were given to subordinates. To fellow Top Managers, the First Director Assistant at RS2 shared his "thoughts" [did not clarify. But 'thought' could be ideas] to the government (DIKTI) while the Director at RS2 shared his ideas by giving suggestions or recommendations on departments or the clarification of the engineering degree. The Director at RS3 also gave recommendations to the government (DIKTI) in formal meetings. However, he gave advice to his subordinates informally. The First Director's Assistant at RS3 gave feedback to his colleagues. The reason for sharing was quite different. The First Director's Assistant at RS2 gave feedback, in particular, to motivate his sub-ordinates to do tasks. Whereas, the First Director at RS3 believed that by giving feedback, they could "complete each other".

Besides sharing knowledge related to their obligations as lecturers and responsibilities Top Managers also shared knowledge which was not related to their

obligations and responsibilities. For instance, Top Managers at RS1 shared information related to current affairs, whereas Top Managers at RS2 shared religious beliefs and Top Managers at RS3 shared information [did not clarify what kind of information. However, as the sharing was in the State Polytechnics' First Director's Assistants' mailing list, the information might be correlated to their responsibilities as First Director Assistant] and administrative issues.

8.1.1.1 Types of Knowledge Shared by Top Managers

Top Managers at RS1 shared individual and collective, tacit and explicit types of knowledge. They, however, did not share tacit and explicit, either individual or collective periodic types of knowledge. Top Managers at RS2 shared semantic and episodic, both individual and collective, tacit types of knowledge. For explicit types of knowledge, Top Managers at RS2 shared individual semantic, declarative, and episodic knowledge. For explicit collective type of knowledge, Top Managers at RS2 shared semantic, episodic, and periodic types of knowledge. Similar to Top Managers at RS1 and RS2, Top Managers at RS3 shared individual semantic, episodic and declarative types of knowledge. For tacit collective types of knowledge, one Top Manager at RS3 shared episodic knowledge through participation in department meetings where he became involved in the discussion. In explicit types of knowledge, Top Managers shared individual semantic and declarative knowledge while for explicit collective knowledge, they shared declarative and periodic knowledge.

8.1.1.2. How Knowledge is Created by Top Managers

The sharing of knowledge by individuals in this study created organisational knowledge in the institutions. Knowledge created at RS1 and RS2 was generally through socialisation, however, to a lesser degree knowledge was also created through externalisation. Alternatively, at RS3, most knowledge created by Top Managers was shared through internalisation and some through externalisation.

8.1.1.3. Formal and Informal Approaches

Similarities and differences existed across the three sites in the approach they used when they shared knowledge. In general, the approach to knowledge sharing by Top Managers depended on what knowledge was shared, who the recipients were, and the perceived effectiveness of the approach. Top Managers at RS1 and RS2 also considered what knowledge was shared and what level the meeting was when deciding what approach to apply. Meanwhile, Top Managers at RS3 focused

on the type of knowledge in deciding the approach to deploy. Depending on what knowledge was shared, Top Managers across the sites shared knowledge which was part of their regulated obligation as lecturers (such as the submission of PDP reports) in formal meetings. Depending on who the recipients were, such as recipients from outside their institution or higher ranking government officers such as DIKTI and DPR, the discussions were also in formal meetings. Similar to Top Managers at RS1, Top Managers at RS2 shared knowledge which was related to their responsibilities formally. They added that other knowledge was commonly shared informally through a cultural mechanism called "*kongkow*". Top Managers at RS3, however, shared key points from PDPs in formal meetings even though there was no rule related to sharing key points of PDPs.

Top Managers across the three research sites had different ideas and reasons regarding which approach was more effective. Top Managers at RS1 and RS2 believed that an informal approach was more effective than formal one, whereas, Top Managers at RS3 considered both approaches to be equally effective. Local culture influenced the Top Managers belief that an informal approach was more effective for sharing knowledge because many participants (audience/recipients) were less active during formal discussions. At this site informal meetings were also considered to be more enjoyable for all participants because they stimulated participants to express their ideas and new ideas emerged. Top Managers at RS2 also considered informal approaches to be more effective for sharing knowledge, yet, they engaged with both formal and informal approaches because they believed both were necessary. They assumed that an informal approach was more effective because it encouraged participation and created a two-way discussion in which participants could interact freely with Top Managers. Informal approaches to knowledge sharing were also useful when sharing sensitive topics such as those related to sub-ordinates, evaluation, or religion.

Unlike Top Managers at RS1 and RS2, Top Managers at RS3 considered a formal approach to be more effective than an informal approach even though they assumed that both mechanisms were important. Top Managers at RS3 also considered the practicality of an approach for sharing knowledge when deciding which approach to apply. Top Managers at this site claimed that at formal meetings, knowledge exchange took place, they received more knowledge and the knowledge was documented. Top Managers at RS3 acknowledged that culture, which tended towards formalisation and documentation, influenced their belief in the effectiveness of the approach. They believed that formalisation and documentation

were important in government institutions like RS3. They also alleged that the participants paid more attention to the discussion in a formal meeting than in an informal meeting. Therefore, knowledge exchange took place. They admitted that being Top Managers at RS3 offered more opportunities for them to be in formal meetings.

Nevertheless, although Top Managers at RS1 and RS2 argued an informal approach was a more effective approach, they also admitted that a formal approach was important. Top Managers at RS1 agreed that formal discussions were needed as well as, they were also effective ways to share knowledge to more participants. Both were needed to complete each other. As with Top Managers at RS3, Top Managers at RS2 also acknowledged that a formal approach to knowledge sharing was important to formalise the important topics that emerged from informal sharing and thus increased knowledge.

Face-to-face interaction, according to Top Management groups at RS1 and R2, was a more effective technique for sharing knowledge than sharing it through Information Technology. Culture influenced this approach at RS1. Top Management at this site believed face-to-face interaction built intimacy and more effectively enabled the receiver to understand the information and the sender to provide faster feedback to recipients. Top Managers at RS2 agreed, whereas Top Managers at RS3 considered both face-to-face interaction and using IT techniques to share knowledge were effective. IT was seen also by Top Managers at this site as an effective tool for data sharing while face-to-face interaction was effective for sharing knowledge when details and body language were needed. Similar to Top Managers at RS3, Top Managers at RS1 recounted that IT was employed to share documents at anytime and anywhere. Meanwhile, Top Managers at RS2 recalled that IT could be more effective when the information shared was in the form of data or a document.

8.1.2. What Knowledge is Shared by Middle Managers at RS1, RS2, RS3

Table 8.2 below presents the knowledge shared by participants from the Middle Management group at RS1, RS2, and RS3.

Table 8.2

Knowledge Shared by Middle Managers at RS1, RS2, and RS3

Area of knowledge	Knowledge shared	Participants		
		Middle Managers		
		RS1	RS2	RS3
<i>Tridharma</i>	Teaching material	√	√	√
	Research methods	√		√
	Dedication to community (community service)	√	√	√
Professional Development Programs	PDP reports	√	√	√
	PDP key points	√	√	√
	PDP material	√		√
	PDP information	√	√	√
Expertise, design		√	√	√
Pass on information		√		
Information on administrative issues		√	√	
Management		√	√	√
Feedback after a formal meeting		√		
Current affairs		√		√
Policy			√	
Unit's service			√	
Teaching techniques			√	
Reports			√	
Student issues and problems			√	
Academic affairs				√
Information to stakeholders				√
Institutional data				√

Table 8.2 records the knowledge shared across the three research sites and indicates the differences and similarities in the knowledge shared by their Middle Managers. Middle Managers at RS1, RS2, and RS3 all shared knowledge related to their obligation as lecturers (*Tridharma*, Professional Development Programs, expertise) and in accordance with their responsibilities as Middle Managers in their institutions. Similarities were noted with the knowledge shared by Top Managers. As with Top Managers at RS1, RS2, and RS3, Middle Managers were also lecturers in departments. Consequently, they were obliged to share knowledge related to *Tridharma* and in line with their responsibilities and structural positions as Middle Managers. The differences in what knowledge was shared by Middle Managers was linked to topics from their area of knowledge, the way they shared the knowledge, and the reasons for sharing knowledge.

In *Tridharma*, almost all of the Middle Managers across the sites shared knowledge about teaching materials, research methods and community service (dedication to community). Middle Managers at RS2, however, did not acknowledge they shared knowledge about research methods, nor that they share the teaching material in a similar way. Middle Managers at RS1 and RS3 shared knowledge in an expertise group in their institutions such as KBK. Middle Managers at RS2 did not illustrate the use of an expertise group to share teaching material. Middle Management participants at RS1 shared data for research, theses (through journals), references (documents), research results, giving reviews or feedback on colleagues' research proposals, and research proposals or ideas for specific research. Most of these activities were carried out in Academic Forums, within their departments. Journals were also placed "on the meeting table". Meanwhile, Middle Managers at RS3 shared knowledge related to research methods by collaborating with other colleagues to get research funding and through published journals. They did not note that they shared research methods in a formal meeting such as in an Academic Forum like Middle managers at RS1. Even though sharing knowledge with the community conducted by Middle Managers at RS1 and RS3 was by building products for the community, it is noted, that the products they established were quite dissimilar. Middle Management participants at RS1 shared knowledge with the community by: designing and giving a constructed machine to their community; fieldwork at PLN (an Electricity Department); and set discussions with the community where they could share their expertise. Middle managers at RS3 built and established small electrical generators and provided training to the younger generation within youth organisations in local villages. Middle Managers at RS2, however, trained other colleagues to operate machines and gave lessons on management so that their colleagues could train the community to operate the machine and they could also "share entrepreneurship" with the community [Training of Trainers]. The reasons for sharing knowledge in *Tridharma* were slightly different. One Middle Management participant at RS1 believed that the sharing of knowledge related to *Tridharma* was influenced by their "job" as lecturers, whereas, Middle Managers at RS3 shared knowledge related to *Tridharma* because they "must collect points to upgrade our rank" [as lecturers] and as part of their responsibilities.

In general, Middle Managers at RS1, RS2, and RS3 shared knowledge related to Professional Development Programs such as reports, key points, material, and information. Only Middle managers at RS2 did not state how they shared PDP

material. All Middle Management participants across the sites submit the PDP reports to their supervisors or to their directors. Middle Managers at RS1 and RS3 shared PDP material in a similar way, by sharing the hard copy of the handouts or modules. Yet, Middle Managers at RS3 also put the PDP material on an information table for interested individuals. Whereas Middle Managers at RS1 forward the information related to PDPs, Middle Managers at RS3 shared the information through informal interaction with their colleagues. But Middle Managers at RS1 and RS3 also shared the hardcopy of the information, which could be in the form of brochures. The key points of PDPs were shared through informal discussion by Middle Managers at RS1. Middle Managers at RS2, however, shared the PDP key points through both informal and formal discussions while Middle Managers at RS3 shared the PDP key points mostly through formal discussion. There was little difference in the reasons for sharing knowledge in PDPs between Middle Managers at RS1 and RS3. The sharing was mainly closely related to their obligation (such as submitting PDP reports) and their responsibility as Middle Managers (such as the sharing of PDP key points). Middle Managers at RS3, however, also used competition with other polytechnics abroad as the reason for uploading PDP key points. Middle Managers at RS2 shared PDP key points because their colleagues expected it.

Middle Managers shared their expertise with their colleagues who had similar background knowledge, or similar expertise. Therefore, the sharing they did, closely related to their background knowledge or expertise. As Middle Managers across three research sites came from different departments, the sharing was also relatively dissimilar. Middle Managers at RS1 shared their expertise in the form of discussions on the new development or invention in their field and followed by sharing documentation such as new articles, journals, and machine design with other colleagues. Whereas, the Head of the Professional Unit as one of the Middle Managers at RS2, shared his expertise through collaborating with other colleagues, such as teaching designing of websites and 'how to use IT applications'. Another Middle Manager at RS2, the Vice Head of the Technical Department, shared his expertise by giving feedback on the topic related to 'solar cells' with his colleagues and students. A Middle Manager at RS3, the Head of Technical Study Program 2, shared his electrical expertise, through an informal discussion. Only one of the Middle Managers at RS2 explained that the reason for sharing his expertise, was because of his job as a lecturer with the responsibility to improve the institution.

Middle Management participants shared knowledge regarding management, information and administrative issues which were related to their responsibilities. Interestingly, Middle Managers at RS3 did not remark that they shared information on administrative issues. Middle Managers at RS1 and RS3 shared knowledge with their supervisors in management through discussion and Middle Managers at RS1 also shared knowledge on management with their colleagues. One of the Middle Managers at RS2 (the Head of Professional Unit) also discussed cooperation and entrepreneurship within his Unit, which differs slightly from Middle Managers at RS1 and RS3. Middle Managers at RS1 indicated they shared their knowledge in management because of their structural position as Middle Managers while Middle Managers at RS2 and RS3 did not define a reason for sharing knowledge in management.

As Middle Managers at department level, Middle Managers at RS1 and RS2 shared information related to administrative issues. They circulated information to sub-ordinates. They had similar reasons for sharing this information. These reasons were associated with their responsibility as “a head of department” or part of “our job”.

Middle Managers from RS1 also shared knowledge that was not related to their obligations as lecturers or responsibilities as Middle Managers, such as feedback after a formal meeting and on current affairs. Only Middle Managers at RS1 gave feedback after attending a formal meeting. Current affairs, however, was shared by Middle Managers at RS1 and RS3, although the way they shared current affairs was different.

Only Middle Managers at RS2 did not recount that they shared knowledge in the area of current affairs. Middle Managers at RS1 described that they shared information which might not be on work-related topics (current affairs). One Middle Manager at RS1 believed that the sharing of current affairs was influenced by the open-local culture of the province and was conducted by informal discussion. Meanwhile, Middle Managers at RS3 used an informal arranged gathering, called *Arisan*, to share knowledge on current affairs. According to MM3, the sharing of current affairs through *Arisan* was influenced by open-local culture in the province where RS1 was. The topic could be anything, such as social issues, best-practice topics, skills, or (land) reclamation. The reasons for sharing current affairs were quite different. MM3 at RS1 said that the sharing of current affairs happened because it was their “habit”. It is a “natural” thing that happened when they gathered, which was influenced by their culture. . Unlike the reasons declared by a

Middle Manager at RS1, the reasons for sharing current affairs was due to being busy during working hours and their work locations were separated. Therefore, the discussion on informal topics in an informal discussion such as *arisan* was considered to be important.

8.1.2.1. Types of Knowledge Shared by Middle Managers

Middle Managers shared tacit and explicit knowledge which could be individual and collective knowledge. The Middle Managers at RS1 shared individual and collective tacit or/and explicit knowledge where the tacit-individual knowledge could be semantic, declarative, and episodic. For explicit knowledge, individual knowledge could be declarative or semantic material and collective tacit knowledge was also shared such as knowledge related to conducting research. For explicit collective knowledge, the knowledge shared could be semantic and declarative knowledge, such as teaching schedules. Like Middle Managers at RS1, Middle Managers at RS2 shared tacit and explicit knowledge both individually and collectively. The knowledge could be individual and collective semantic or episodic. The sample of types of knowledge shared might be related to their positions as Middle Managers. Both Middle Managers at RS3 shared individual, and collective tacit and explicit knowledge, like Middle Managers at RS1 and RS2. However, Middle Managers at RS3 shared tacit and explicit collective periodic material. Moreover, they also did not share knowledge which was tacit and explicit collective declarative.

8.1.2.2. How knowledge is created by Middle Managers

Across the sites, knowledge was created through Socialisation, Externalisation, Internalisation, and Combination (SECI). At RS1, knowledge was created mostly through socialisation. One of Middle Managers at RS1 rationalised, that culture influenced the knowledge creation process. Another factor beside culture, which influenced how the knowledge was created at RS1, was the opportunity to meet each other at the workplace. Middle Managers at RS1 explained that they often met in their office and then started creating a discussion. Similar to Middle Managers at RS1, most knowledge created by Middle Managers at RS2 was through socialisation. However, in contrast most knowledge created by Middle Managers at RS3 was through the combination processes, where they shared or exchanges data.

8.1.2.3. Formal and Informal Approaches

There were similarities and differences in selecting the approach for sharing knowledge. In general, Middle Managers selected the approach used during sharing knowledge depending on what knowledge was being shared. Another factor was who the recipients were as mentioned by Middle Managers at RS1 and RS3. However, implicitly, Middle Managers at RS2 considered who the recipients were as one factor, which influenced the selection of approaches applied during knowledge sharing. Middle Managers at RS2 stated that where the knowledge sharing took place, was the next determinant factor for choosing the approach. Why the knowledge needed to be shared was another factor for determining the approach used. Interestingly Middle Managers at RS3 did not mention this factor as one to be considered in selecting the approach. However, they were quite specific about how the type of knowledge shared decided the approach applied during the sharing of knowledge. Middle Managers at RS1, RS2, and RS3 all agreed that the effectiveness of the approach to be deployed for sharing the knowledge influenced the approach used.

Even though most Middle Managers agreed an informal approach was a better approach, however, their reasons were different. Both Middle Managers at RS1 believed that an informal approach was more effective than a formal one, since an informal approach accommodated the need to share urgent knowledge. The use of an informal approach was also more effective in its application as they met their colleagues frequently in their office and it created more opportunity to share information. Like Middle Managers at RS1, Middle Managers at RS3 admitted that an informal approach was more effective for sharing knowledge. Yet, their reasons were different. Middle Managers at RS3 recounted that the culture and the intimacy created by an informal interaction, influenced the effectiveness of an informal approach for sharing knowledge. However, Middle Managers at RS2 had quite different opinions regarding the effectiveness of the approach. Similarly to Middle Managers at RS1 and RS3, the Vice of the Technical Department, counted an informal approach as a more effective approach for sharing knowledge because in a formal meeting the time of the meeting was limited. The schedule was set and the duration was usually two or three hours per meeting. If there were a large number of participants, the formal meeting could not facilitate all of the participants sharing knowledge. Meanwhile, the Head of the Professional Unit at RS2 considered the formal approach more effective even though, at the same time he also admitted that he felt more comfortable in an informal discussion.

There were also similarities and differences in the techniques used for sharing knowledge, such as through face-to-face interaction or using IT. Overall, Middle Managers approved face-to-face interaction as a more effective technique for sharing knowledge. However, they had distinct reasons for this opinion. Middle Managers at RS1 and RS2 believed face-to-face interaction was more effective since it conveyed the knowledge better, and allowed recipients better comprehension. The Head of the Professional Unit at RS2 considered face-to-face interaction as part of the 'humanism part of communication'. Meanwhile, Middle Managers at RS3 recounted that face-to-face interaction was more effective than using IT for sharing knowledge, as in face-to-face interaction the interaction potentially developed into a discussion. The participants could thereby find out if the knowledge shared was correct and applicable.

Middle Managers at RS1, RS2, and RS3 were also in agreement that the use of IT or face-to-face interaction for sharing knowledge depended on what knowledge was to be shared. They were in line, viewing IT as an important tool for sharing data. However, Middle Managers at RS1 explained that when the knowledge shared needed to be elaborated further, face-to-face interaction was the right choice. Meanwhile, one of the Middle Managers at RS2 recalled considering the culture as well in deciding what approach was used, as the use of IT might be seen as less polite. Middle Managers at RS3 admitted that IT was a fast tool for sharing data.

8.1.3. What Knowledge is Shared by Lecturer-Unit Participants at RS1, RS2, RS3

There were similarities and differences in what Lecturer-Unit shared as presented in Table 8.3. Even though one of the Lecturer-Unit participants at RS1 warned the interviewer that she did not share a large amount of knowledge, as she did not have any structural position. Table 8.3, however, shows that Lecturer-Unit participants across the sites shared relatively similar knowledge to the knowledge shared by Top Managers and Middle Managers as described above. Lecturer-Unit participants from RS1, RS2, and RS3 shared knowledge related to their obligation as lecturers such as *Tridharma*, Professional Development Programs, expertise, classroom management, and student issues and their responsibilities as members of a unit in their institutions (sharing unit's data, information, or service). The differences were related to what part of the knowledge was shared (for example Lecturer-Unit at RS1 did not mention the sharing of PDP information), how they shared the knowledge, and the reason they shared the knowledge.

Table 8.3 describes what knowledge was shared by participants who are active in units or Lecturer-Unit participants at RS 1, 2, and 3.

Table 8.3

Knowledge Sared by the Lecturer-Unit at RS1, RS2, and RS3

Area of knowledge	Knowledge shared	Participants		
		Lecturer-Unit		
		RS1	RS2	RS3
<i>Tridharma</i>	Teaching material	√	√	√
	Research methods	√	√	√
	Dedication to community (community service)	√	√	√
Professional Development Programs	PDP reports	√	√	√
	PDP key points	√	√	√
	PDP material	√	√	√
	PDP information		√	√
Unit's service		√	√	√
Teaching techniques		√		
Expertise		√	√	√
Current affairs		√	√	√
Proposals			√	
Religion (religious beliefs)			√	
Learning techniques			√	
Classroom management			√	√
Softcopy (through email)			√	
Student issues			√	√
Links to websites			√	
Feedback				√
Academic affairs				√
Administrative documents				√
Books				√

Lecturer-Unit participants from RS1, RS2, and RS3 shared knowledge related to *Tridharma* such as teaching material, research methods and community service. Lecturer-Unit participants shared teaching material with colleagues who taught similar subject material. Lecturer-Unit participants at RS1 and RS3 clearly indicated that they shared teaching material in an expertise group such as KBK. Whereas, Lecturers-Unit at RS2 shared knowledge through informal discussion with colleagues who taught similar subject material. They did not clarify that they shared the teaching material in KBK. Lecturer-Unit participants at RS1, however, were the participants in this category who shared the results of discussions regarding teaching materials to their supervisor. Besides sharing the teaching material, in this expertise group, discussions on teaching material took place as well. If the way Lecturer-Unit participants showed slight differences in sharing teaching material,

the way they shared knowledge in research methods displayed obvious dissimilarities. Lecturer-Unit participants at RS1 shared knowledge by publishing their research in journals and consulted those who were interested in their research. Meanwhile, Lecturer-Unit participants at RS2 shared data or budget plans informally to recipients whereas Lecturers-Unit at RS3 collaborated with colleagues in conducting research. The sharing of community service demonstrated slight differences, as Lecturer-Unit participants at RS3 shared information with the community only, whereas, Lecturer-Unit participants at RS1 and RS2 shared knowledge with the community by collaborating with other colleagues sharing their expertise with the community.

Lecturer-Unit participants in this study had similar and different reasons for sharing knowledge in *Tridharma*. Commonly, they agreed that they shared knowledge in *Tridharma* because of their obligation or duty as lecturers. Yet, Lecturer-Unit participants at RS2 added that they shared knowledge in *Tridharma* in order to support their work as lecturers and to make the teaching material useful for others, while Lecturer-Unit participants at RS3 shared teaching material because one subject was taught by more than one lecturer. Thus, they needed to synergize the teaching material.

The findings show there were similarities and differences in the way they shared knowledge and the reason they shared knowledge in Professional Development Programs. Lecturer-Unit participants submitted the PDP reports to their supervisors. They also shared hard and softcopies of PDP material informally as the sharing of PDP material was not regulated. Nevertheless, one of the Lecturer-Unit participants at RS3 put the PDP material in a cupboard where colleagues could freely borrow it if they needed to. Like the sharing of PDP material, the sharing of PDP key points was not regulated. Hence, the sharing was conducted informally through informal discussion by Lecturer-Unit participants. Lecturer-Unit participants at RS2 and RS3, however, described that the sharing might be in a formal discussion if the sharing of PDP key points was in their internal unit. Both Lecturers-Unit at RS2 and RS3 shared PDP information informally such as through email.

The reasons for sharing knowledge of PDPs were quite varied. The reason for submitting a PDP reports was similar. Lecturer-Unit participants in this study submitted the PDP reports because they were obliged to submit the reports as evidence that they had attended a workplace funded program. Whereas, for sharing PDP material, Lecturer-Unit participants at RS1 shared the material with colleagues,

so that even though the colleagues did not have an opportunity to attend the program, they still got the knowledge. Meanwhile, Lecturer-Unit participants at RS2 shared the PDP material only if there was a request to share and the Lecturers-Unit at RS3 did not clarify why they shared the PDP material.

The way Lecturer-Unit participants shared their expertise on current affairs and the unit's service, had both similarities and differences. The similarities on expertise sharing relied on the recipients of the sharing while the similarity on the unit's service sharing depended on what unit the participants were active in. Lecturer-Unit participants shared their expertise with colleagues who had similar expertise or background knowledge to them. Thus, as Lecturer-Unit participants in this study came from different backgrounds, the expertise they shared was obviously different. Lecturer-Unit participants at RS1 shared teaching guidance and showed the recipients how to teach, while Lecturer-Unit participants at RS2 gave the recipients advice regarding budgets. Lecturer-Unit participants at RS3 did not explain the way they shared their expertise. Only one Lecturer-Unit participant at RS1 gave a reason as to why she shared her expertise, which was because she was an assessor. Meanwhile, for current affairs, in general, Lecturer-Unit participants at RS1 and RS2 shared current affairs in an informal discussion in their offices while they had a break. One Lecturer-Teaching participant at RS1 indicated that the topics of discussion between males and females was different. Males shared information regarding politics, while the females' shared entertainment news. The way Lecturer-Unit participants shared the unit's service was considerably different. Lecturer-Unit participants at RS1 examined students' or colleagues' competencies and prepared the documentation for the certification through formal mechanisms, while Lecturer-Unit participants at RS2 shared data with colleagues in the unit and discussed their work. The Lecturer-Unit participants did not specify the reason for sharing their unit's service.

The sharing of knowledge in classroom management and student issues by Lecturer-Unit participants at RS2 and RS3 did not show distinctive differences. The way they shared classroom management was just through informal discussion as was the sharing of student issues. The reasons for sharing were not defined clearly by Lecturer-Unit participants at RS3. However, Lecturer-Unit participants at RS2 shared knowledge in classroom management in order to improve the teaching-learning process in the classroom while the sharing of student issues was because of a request.

8.1.3.1. Types of Knowledge Shared by Lecturer-Unit Participants

Lecturer-Unit participants at RS1, RS2, and RS3 shared individual and collective of explicit and tacit types of knowledge. Lecturer-Unit participants at RS1, however, shared less variety of knowledge than Lecturer-Unit participants at RS2 and RS3. Lecturer-Unit participants at RS1 shared semantic and declarative types of individual tacit and explicit knowledge. They also shared semantic types of collective tacit knowledge and episodic form of individual explicit knowledge. Meanwhile, Lecturer-Unit participants at RS2 shared semantic, declarative, and episodic forms of individual tacit knowledge. For collective tacit knowledge, they shared semantic and episodic knowledge. Similar to tacit knowledge, Lecturer-Unit participants at RS2 shared all types of tacit knowledge except for periodic individual knowledge. They shared semantic and declarative collective explicit knowledge. The members of the Lecturer-Unit group at RS3 shared similar individual tacit knowledge such as sharing individual semantic, episodic, and declarative forms of tacit knowledge. For collective tacit knowledge, they shared collective episodic knowledge. The Lecturer-Unit participants at RS3 shared all kinds of individual explicit knowledge. They only shared collective episodic and periodic forms of explicit knowledge.

8.3.1.2. How Knowledge is Created by Lecturer-Unit Participants

Lecturer-Unit participants in this study created organisational knowledge through socialisation, externalisation, combination, and internalisation. The main process of organisational knowledge creation was socialisation. Besides socialisation, the organisational knowledge created was also largely through combination. The next common process of organisational knowledge creation was through internalisation. The third favourable process, internalisation, happened at RS1 and RS3 while the Lecturer-Unit participants at RS2's third favourable process of organisational knowledge creation was through externalisation.

8.3.1.3. The Formal and Informal Approaches

The previous findings described the similarities and differences between the approaches Lecturer-Unit participants used to share knowledge. All Lecturer-Unit participants selected the approach for sharing knowledge based on what knowledge was shared and the effectiveness of the approach to be applied during the sharing. If the sharing of knowledge related to their obligations, such as *Tridharma*, or the sharing was regulated, for example to the submitting of PDP reports it would be

through a formal mechanism. Lecturer-Unit participants at RS2 and RS3 had another category for selecting the approach, which was who the recipients were. They, however, had different criteria. Lecturer-Unit participants at RS2 shared knowledge informally with the community, while Lecturer-unit participants at RS3 shared knowledge formally with recipients who had a higher rank than them and shared knowledge informally with colleagues who had a similar rank to them. Lecturer-Unit participants at RS2 also chose the approach based on where the sharing took place. If the sharing happened in their department, the sharing was usually in a formal discussion while informal discussions happened when the sharing occurred in their unit.

Even though they were in agreement that the effectiveness of an approach influenced their considerations in choosing the approach, they differed in which approach was more effective for sharing knowledge. Lecturer-Unit participants at RS1 and RS3 could not decide which approach was more effective. They actively used both approaches. Lecturer-Unit participants at RS1 used a formal approach for sharing their obligations and regulated the sharing of knowledge. Yet, they clearly did not feel relaxed and there were time constraints in formal meetings. Meanwhile, one Lecturer-Unit participant at RS3 agreed that a formal approach was more effective than the informal one. She admitted that she viewed this from the recipients' point of view, where the recipients received a large amount of knowledge in a formal meeting. She realised she did not have much opportunity to share in a formal exchange. Another Lecturer-Unit participant at RS2 thought that both approaches were effective. On the other hand, Lecturer-Unit participants at RS2 decided that a formal mechanism was more effective than the informal one as in a formal meeting because there was more recipients to share knowledge with, more knowledge circulated, and the recipients were more serious as there was a forced feeling in a formal meeting.

There were similarities and differences regarding the preferences for sharing knowledge, either using IT or face-to-face interaction. Lecturer-Unit participants at RS1 were not in agreement as Lecturer-Unit 1 preferred the use of IT as today's life is influenced by technology and Lecturer-Unit 2 favoured face-to-face interaction. Similar to Lecturer-Unit participants at RS1, Lecturer-Unit participants at RS2 did not decide which method was the preferred method for sharing knowledge. They mostly used IT for sharing if the sharing was associated with their work in their unit since most information they shared was in the form of data. Meanwhile, for sharing knowledge outside their work in their unit, they used face-to-face interaction.

8.1.4. What Knowledge is Shared by Lecturer-Teaching Participants at RS1, RS2, RS3

The findings demonstrated similarities and differences on what knowledge was shared by Lecturer-Teaching participants. Lecturer-Teaching participants shared knowledge related to their obligations as lecturers, such as *Tridharma*, PDPs, expertise, and student issues. However, Lecturer-Teaching participants at RS2 did not clarify if they shared academic affairs and student issues. Lecturer-teaching participants at RS1 and RS3 shared knowledge related to current affairs. The differences related to what knowledge was shared, the way they shared the knowledge, and the reasons for sharing the knowledge. Table 8.4 illustrates that all Lecturer-Teaching participants shared knowledge in *Tridharma*. They also shared PDP key points. Lecturer-Teaching participants at RS2 did not indicate they shared PDP reports and information and only Lecturer-Teaching participants at RS3 shared PDP information.

Table 8.4. illustrates what knowledge was shared by participants from Lecturer-Teaching groups at RS 1, 2, and 3.

Table 8.4:

Knowledge Shared by Lecturer-Teaching at RS1, RS2, and RS3

Area of knowledge	Knowledge shared	Participants		
		Lecturer-Teaching		
		RS1	RS2	RS3
<i>Tridharma</i>	Teaching material	√	√	√
	Research methods	√	√	√
	Dedication to community (community service)	√	√	√
Professional Development Programs	PDP reports	√		√
	PDP key points	√	√	√
	PDP material			√
	PDP information	√		
Expertise		√	√	
Academic affairs		√	√	
Student issues		√	√	
Current affairs		√	√	
Classroom management			√	√
Documents				√
Administrative material				√

The way Lecturer-Teaching participants shared knowledge in *Tridharma* revealed similarities and differences. Lecturer-Teaching participants at RS2 and RS3

shared teaching material such as job sheets and modules informally. The sharing was with colleagues who taught similar subject material because one subject might be taught by more than one lecturer. Whereas, Lecturer-Teaching participants at RS1 shared teaching material in a formal expertise group such as KBK. Not only for sharing teaching material, Lecturer-Teaching participants at RS1 also used formal ways for sharing research methods while Lecturer-Teaching participants at RS2 and RS3 shared research methods through informal discussions. Sharing knowledge regarding community service reflected differences in the way the Lecturer-Teaching participants at RS1, RS2, and RS3 shared this knowledge. Lecturer-Teaching participants at RS1 and RS3 shared knowledge with the community by providing training for communities in rural areas and one Lecturer-Teaching participant at RS1 shared his knowledge on how to make a proposal to conduct community service activities. Unlike Lecturer-Teaching at RS1 and RS3, Lecturer-Teaching participants at RS2 shared information regarding entrepreneurship with communities and with colleagues. A Lecturer-Teaching participant at RS2 shared information on the dates of community service proposal submissions.

There were parallel and varied reasons for sharing knowledge in *Tridharma* indicated by Lecturer-Teaching participants. The main reason for sharing knowledge in *Tridharma*, was the obligation as lecturers. For sharing teaching material, in general, they shared the knowledge because one subject was taught by more than one lecturer. One Lecturer-Teaching participants at RS3 shared research methods knowledge to avoid misunderstandings in conducting research with team members while one Lecturer-Teaching participant at RS2 shared her knowledge in community service to motivate her colleagues to do community service.

Lecturer-Teaching participants shared key points from PDPs they had attended in a similar way, in informal discussions. Lecturer-Teaching participants at RS1 shared the key points with colleagues in KBK teams while Lecturer-Teaching participants at RS2 shared the key points with colleagues in departments. However, even though one Lecturer-Teaching participant at RS3 shared PDP key points informally, the other Lecturer-Teaching participant at RS3 shared the key points of PDPs through a formal induction meeting with new lecturers. Lecturer-Teaching participants at RS1 and RS3 shared PDP reports with their supervisors. The reasons were quite alike. Lecturer-Teaching participants at RS1 and RS3 shared PDP reports because it was regulated that a report be submitted as evidence of attending a program.

There was no obvious difference in the way Lecturer-Teaching participants shared their expertise, academic affairs, and student marks. They shared their expertise with their colleagues who had similar background knowledge, informally. Therefore, like Lecturer-Teaching participants at RS2, they shared their expertise with colleagues in their department. Meanwhile, for sharing knowledge in academic affairs, Lecturer-Teaching participants at RS1 and RS3 shared examination questions or curriculum in formal meetings. Student issues such as difficult behaviour in classrooms were shared informally by Lecturer-Teaching participants at RS1 and Lecturer-Teaching 2 at RS3. One Lecturer-Teaching participant at RS3 shared student issues formally. The sharing of current affairs was conducted informally during recess time and the topics were quite diverse. Lecturer-Teaching participants at RS1 (both of them were males) shared information related to politics and education while Lecturer-Teaching participants at RS 3 (both females) shared information on their children (family). The different topics discussed during the sharing of current affairs were also described by Lecturer-Unit participants at RS1.

8.1.4.1. Types of Knowledge Shared by Lecturer-Teaching Participants

All Lecturer-Teaching participants shared individual and collective tacit knowledge. They, however, shared more individual knowledge than collective knowledge. Lecturer-Teaching participants at RS3 shared all individual types of tacit knowledge. Lecturer-Teaching participants at RS1 shared individual semantic, declarative, and episodic tacit knowledge while the members of the Lecturer-Teaching group at RS2 shared only individual semantic and episodic tacit knowledge. Lecturer-Teaching participants from these three research sites shared a semantic type of collective tacit knowledge. Lecturer-Teaching participants at RS2 and RS3 shared an episodic form of collective tacit knowledge while Lecturer-Teaching participants at RS1 did not. For explicit types of knowledge, Lecturer-Teaching participants at RS1 did not share collective knowledge while the Lecturer-Teaching participants at RS2 and RS3 did share this type of knowledge. The members of these two research sites shared collective semantic explicit type of knowledge. Lecturer-Teaching participants at RS2 shared an episodic form of collective explicit knowledge while the members from RS3 shared collective procedural explicit knowledge.

8.1.4.2. How Knowledge is Created by Lecturer-Teaching Participants

The organisational knowledge created by the members of Lecturer-Teaching groups at RS1, RS2, and RS3 was mainly through socialisation. The next main process of how knowledge is created in an organisation was dissimilar amongst the three research sites. At RS1, Lecturer-Teaching participants created knowledge more through internalisation. Meanwhile, the organisational knowledge created by Lecturer-Teaching participants at RS2 and RS3 was through a combination process. Whereas the organisational knowledge created by Lecturer-Teaching participants at RS1 and RS3 was through socialisation, externalisation, combination, and internalisation, the members of the Lecturer-Teaching group at RS2 created organisational knowledge only through socialisation and combination.

8.1.4.3. The Formal and Informal Approaches

There were similarities and differences on the approach selected by Lecturer-Teaching participants for sharing knowledge. Lecturer-Teaching participants chose the approach based on what area of knowledge was shared and the effectiveness of the approach. Lecturer-Teaching participants at RS2 depended on who the recipients were in deciding the approach. Similar to other participant categories above, if the knowledge was in relation to their obligations (such as *Tridharma*, academic affairs, students' issues) and the sharing was regulated (the submission of PDP reports), the sharing would be through a formal mechanism. Other areas of knowledge were shared informally.

Lecturer-Teaching participants had similar and also different ideas on how effective the approach to be applied for knowledge sharing was determined. In general, they preferred an informal mechanism for sharing knowledge because they felt relaxed, without pressure and less intimidated, and it could be conducted anytime and anywhere. Yet, one Lecturer-Teaching participant at RS1, suggested using a semi-formal mechanism where a formal discussion would be followed by an informal one. In the semi-formal mechanism, for example, a formal meeting was then followed by lunch and during lunch time they continued discussions in a more relaxed atmosphere. One of the Lecturer-Teaching participants at RS3 suggested that she felt reluctant to share knowledge in a formal meeting because she did not want to "upstage" her seniors. This matter appeared as a result of the gap between seniors and juniors. Therefore, even though one Lecturer-Teaching participant at RS3 indicating her preference for a formal mechanism, she also realised that she could not share much knowledge in a formal meeting. This senior-junior gap also

influenced Lecturer-Teaching participants at RS2 to choose the desired approach. As a result, they talked or shared more in an informal meeting. This gap influenced them to share knowledge in informal meetings.

The findings illustrated there was no major difference in the preferred methods for sharing knowledge among Lecturer-Teaching participants from RS1, RS2, and RS3. Most Lecturer-Teaching participants preferred to use face-to-face interaction for sharing knowledge. The main reason being that through face-to-face interaction they would receive quick feedback and the knowledge was understood better. One Lecturer-Teaching participants at RS1 suggested that the assumption such as “was not reading culture yet” (reading is not yet a habit) influenced the face-to-face interaction as a more effective method than the use of IT for sharing knowledge. The recipients needed to read if the information was sent through IT. Another Lecturer-Teaching participant at RS1, however, favoured the use of IT for sharing knowledge.

8.2. Participants’ Opinions on What Motivated Them to Share Knowledge

The second research question focused on participants’ opinions about what factors motivated them to share knowledge. The views of Top Management participants across the three sites are presented first, followed by those of Middle Management participants, Lecturer-Unit participants, and Lecturer-Teaching participants. The findings from each of the groups of participants are compared and contrasted. Table 8.5. illustrates the Top Management participants’ motivations to share knowledge.

8.2.1. Top Management Participants

Table 8.5. illustrates the similarities and differences in what motivated Top Managers across the sites to share knowledge. In general, Top Managers were motivated by being acknowledged by others (recognition), sharing knowledge to create power (the power of knowledge sharing), getting something in return/ more knowledge (reciprocity), obligation, responsibility, and religious beliefs/ reward (from God) when they shared knowledge. Top Managers at RS2 were not motivated by getting something in return such as more knowledge when they shared knowledge. Top Managers at RS3 were not motivated by their obligations and responsibilities when they shared knowledge, while Top Managers at RS1 were motivated by religious motivation when they shared knowledge with others. Top

Managers in previous chapters agreed that there were factors which influenced their motivation to share such as: culture, structural position, religion, and organisational goals and strategies.

Table 8.5

Top Managers' Motivations to share knowledge

Motivation to share	Participations		
	RS1	RS2	RS3
Relationship with recipients	√		
Being acknowledged by others (the power of knowledge sharing)	√	√	√
Sharing knowledge to create power (the power of knowledge sharing)	√	√	√
Getting something in return/more knowledge (reciprocity)	√		√
Obligation	√	√	
Tangible rewards	√		
Perceived power of knowledge			
Responsibility	√	√	
Religious beliefs/ Reward (from God)		√	√
Assurance		√	
Strengthening the topic discussed		√	
People's agreement		√	
Health		√	
To make knowledge meaningful		√	
Perceived power of knowledge		√	
Supporting the Director's / First Director's assistant's work (to develop the institution)			√
Offering gratitude			√
Achieving the organisation's objectives			√
Tangible reward (for the institution)			√
Building networks			√
Motivating sub-ordinates			√
Maintaining self-image			√

Despite similarities in their motivation to share, their “expectations” of the result (expected outcomes) from the sharing of knowledge were different across all three research sites. Top Managers at RS1 shared knowledge to get acknowledgement from the recipients. They assumed or “expected” if they were acknowledged, that would be able to support their position as Top Managers and thus enable them to become the model or the ‘centre’. Meanwhile, Top Managers at RS2 besides wanting to be a role model, expected that the receivers saw them as smart colleagues. Top Managers at RS3, believed that by being acknowledged they would be respected and re-elected as Top Managers at RS3.

Another motivation to share knowledge among Top Managers was the power of knowledge sharing itself. In general, their expected outcome was to get more power, or be seen as more powerful. However, one Top Manager at RS1, expected that by sharing knowledge he would maintain his position as Top Manager. Another Top Manager at RS1 expected that more colleagues would come to him if he shared knowledge and he would have the power to change things. Meanwhile, one Top Manager at RS2 who shared knowledge was motivated by the power of knowledge sharing, expected that his knowledge would be stronger and he would find the answers for many questions. The First Director Assistant at RS2 expected that he would gain respect and privileges if he shared knowledge. Whereas, the Top managers at RS3 realised the power of knowledge sharing so that when he shared knowledge with others he would get the opportunity to go abroad and he enjoyed the outcome of his goal or expectation. Clearly top managers across all three sites saw sharing knowledge as a powerful tool that could be used to create more power within their respective organisations.

Obligation and responsibility were the next motivators for sharing knowledge that influenced Top Managers at RS1 and RS2. Top Managers at RS2 shared simply because it was part of their obligation. One Top Manager at RS1 shared knowledge because he did not want to break the rules, which he felt might disadvantage him. Responsibility to share influenced Top Managers. The First Director's Assistant at RS1 expected that by sharing knowledge as part of his responsibility, he would give prime service to stakeholders, whereas the First Director assistant at RS2 expected that by sharing knowledge, not only would he be conducting his duty as the First Director's Assistant, but he could also motivate his subordinates.

To get something in return and religious factors motivated Top Managers to share knowledge as well. The Director at RS1 admitted that this attention to reciprocity was influenced by his religion, or the concept in his culture [the *Tri Hita Karana* concept of balance in life where people 'take and give']. He expected that not only he would get knowledge from recipients if he shared knowledge, but also expected that by sharing knowledge he would complete his knowledge and have a balanced relationship with humans, Gods, and nature. Differently from Top Managers at RS1, the Director at RS3 expected that by sharing knowledge and receiving new knowledge in return, he would create better knowledge, whereas the First Director's Assistant at RS3 predicted that there would be "a good competition" (between each other) to achieve a better result (because within the organisation, the staff would be knowledgeable as the result of sharing knowledge. Therefore they

would compete to achieve their rank faster with the knowledge they had). Top Managers from both RS2 and RS3 shared knowledge as they were motivated by their religious beliefs [Islamic values]. There was no major differences among them. These managers expected that they would be rewarded by God if they shared knowledge. The First Director's assistant at RS2 defined the rewards as good points, since the sharing he did was *amal jaryah* (good deed). Meanwhile, the First Director's assistant at RS3 referred to rewards as 'fortune'.

8.2.2. Middle Management Participants

Table 8.6. displays the similarities and differences that motivated Middle Managers to share knowledge. Middle Management participants shared knowledge because they were motivated by getting something in return/more knowledge (reciprocity), obligation, being acknowledged, the power of knowledge sharing, responsibility, getting support/getting support as lecturers, and religious beliefs (doing good deeds).

Table 8.6

Middle Managers' Motivations to Share Knowledge

Motivation to share	Participations		
	RS1	RS2	RS3
Getting something in return/more knowledge (reciprocity)	√	√	√
Obligation	√	√	√
Being acknowledged	√	√	√
The power of knowledge sharing	√	√	√
Responsibility	√	√	
Equality	√		
Feeling "lighter"	√		
Culture	√		
Creating conducive atmosphere	√		
Getting support/getting support as lecturers	√	√	√
Strengthening understanding	√		
Religious beliefs (doing good deeds)		√	√
To pay back (gratitude)		√	
Tangible rewards		√	
Relationship with recipients		√	
Perceived power of knowledge		√	
Health			√
Having similar perceptions			√
Realising his ideas			√

Middle Managers at RS3, however, were not motivated by responsibility as Middle Managers when they shared knowledge and Middle Management participants at

RS1 did not indicate they were motivated by religious beliefs when they shared knowledge.

Middle Management participants might be motivated by similar motivations when they shared knowledge, however, the expected outcomes from the sharing they did, were not necessarily similar. When the sharing was motivated by getting something in return, Middle Managers at RS1 expected that the recipients would get similar knowledge to theirs, their research proposals and knowledge would be improved, and one day the receivers (of the knowledge they shared) would help them. This was slightly different from one Middle Manager at RS2 who expected that he would acquire deeper knowledge, whereas Middle Managers at RS3 expected that the reciprocity which occurred during knowledge sharing would create discussions (in sharing knowledge if the participants gave feedback, the discussion would occur as the sharing was interactive and not one sided). One of the Middle Managers at RS3 expected that the receivers would develop the knowledge he shared and one day they would share the developed knowledge back with him.

Obligation and being acknowledged were the other motivations to share as described in Table 8.6. Middle Managers participants shared knowledge as they were obliged either by the policies (such as the application of *Tridharma*), or because it was requested by Top Managers (the Director). The findings showed that there was no clear expectation (expected outcomes) for sharing knowledge motivated by obligation. Meanwhile, the expected outcomes from sharing knowledge motivated by being acknowledged were quite different. One Middle Manager at RS1 expected that his ideas would be accepted by the recipients, whereas other Middle Managers expected that the sharing would result in the feeling of being an expert, be placed in a special place by the recipients, and encourage the recipients to learn more. One Middle Manager at RS2, expected he would be 'lifted' [the social status would be increased] as he would be honoured by the recipients for sharing the knowledge. Whereas, Middle Managers at RS3 had expectations that if they shared knowledge, they would have a good relationship with the recipients and it would result in a feeling of pride.

Other motivations to share included the power of knowledge sharing and responsibility. Even though in general Middle Managers were motivated by these factors, the expected outcomes from the sharing of knowledge, especially when it was motivated by the power of knowledge sharing, were dissimilar. Middle Management participants at RS1 expected that by sharing knowledge, they could

improve administration, teaching systems, the institution's weaknesses, and get support. Unlike Middle Managers at RS1, Middle Managers at RS2 expected that through the sharing of knowledge, they could create a better machine, reinforce each other, and achieve a better result (in research). In the meantime, one Middle Manager at RS3 got support from the local government (in the eastern part of Indonesia) because he shared his knowledge and therefore gained power from the sharing of his knowledge (which gave him support from the local government). Nevertheless, when the motivation to share knowledge was a responsibility, Middle Managers at RS1 and RS2 did not define clearly their expected outcome from the sharing they undertook. The sharing was simply part of their responsibility as Middle Managers in their departments.

The expected outcomes from the sharing of knowledge by Middle Managers was motivated by getting support and by their diverse religious beliefs. The big picture, however, was to avoid troubles in the future. For example, Middle Managers at RS1 expected that by sharing knowledge they could avoid miscommunication. One Middle Manager at RS2 expected that by sharing knowledge the recipients would help them if they were in trouble in the future. Another Middle Manager at RS2 expected that the recipients would help him to create a machine (model) properly. Quite similar to one of Middle Managers at RS2, one Middle Manager at RS3 expected that the recipients would help him if he needed help, such as to replace him when he temporarily could not teach the students in the classrooms. Meanwhile, even though the general expected outcome from sharing knowledge motivated by religious factors was to earn God's reward, there were also different expected outcomes from the sharing of knowledge on this basis. One Middle Manager at RS2 expected that by sharing knowledge he could help his colleagues to do their job better. Another Middle Manager at RS2 expected that the sharing he did would become 'his prayer' when he died. However, one Middle Manager at RS3 expected that the knowledge he shared would make the recipients happy.

8.2.3. Lecturer-Unit Participants

Table 8.7. describes the similarities and differences in what motivated Lecturer-Unit participants to share knowledge. Lecturer-Unit participants shared knowledge as they were motivated by obligation, being acknowledged (recognised), the power of knowledge sharing, responsibility, religious factors/beliefs, and to get something in return/finding greater knowledge (reciprocity). Yet, Lecturer-Unit

participants at RS3 were not motivated by obligation and religious factors when they shared knowledge, while Lecturer-Unit participants at RS2 were motivated by responsibility. Meanwhile, Lecturer-Unit participants at RS1 were not motivated by reciprocity when they shared knowledge.

Table 8.7

Lecturer-Unit Participants' Motivations to Share Knowledge

Motivation to share	Participations		
	RS1	RS2	RS3
Obligation	√	√	
Being acknowledged (recognised)	√	√	√
The power of knowledge sharing	√	√	√
Sharing positive aura	√		
Unifying (teaching material)	√		
Responsibility	√		√
Achieving the objective	√		
Equality	√		
Religious factor/beliefs	√	√	
Maintaining self-image	√		
Perceived power of knowledge		√	
Health (to remember better/to strengthen the memory)		√	
To get something in return/finding greater knowledge (reciprocity)		√	√
To get support		√	
Assurance		√	
To strengthen the knowledge		√	
Improving her work			√
Because they asked me			√
Reaping financial rewards			√

Even though all Lecturer-Unit participants were motivated by being acknowledged and the power of knowledge sharing, the expected outcomes from the sharing of knowledge were different. One Lecturer-Unit participant at RS1 expected that if she shared knowledge and she gained acknowledgement, it would make her very proud. Therefore, the acknowledgement gave her a sense of pride. Being proud was a part of her "humane side". This expectation was similar to one of RS2's Lecturer-Unit participants' expectations. He would be delighted when he shared knowledge. The other Lecturer-Unit participant (Lecturer-Unit 2) at RS2 expected that when they shared knowledge they would make the recipients' lives better (developed). Lecturer-Unit 3 at RS2 shared knowledge and consequently when he received the acknowledgement from the recipients it would make him feel comfortable when he worked together with other members at RS2. Different from Lecturer-Unit participants at RS1 and RS2, one Lecturer-Unit participant at RS3

expected that if he shared knowledge, he could “fill in the gap” if he participated and as a result be acknowledged, then people would not look down on him. Clearly, acknowledgement was a strong motivator and this manifested in different formats (expected outcomes) for the participants.

As was mentioned earlier, the expected outcomes from the sharing of knowledge motivated by the power of knowledge sharing were dissimilar. One Lecturer-Unit participant at RS1 expected she could open her recipients’ eyes and deepen her own knowledge. Lecturer-Unit participants at RS2 expected the results of the sharing (more power achieved) could support them to achieve the objectives (such as upgrading their rank in the organisation) and they could complete their work faster. One Lecturer-Unit participant at RS2 added that the sharing brought happiness to him when he realised that his knowledge or power was increased, as he believed that knowledge is power. Unlike other Lecturer-Unit participants at RS1 and RS2, a Lecturer-Unit participant at RS3 felt uncomfortable if she did not share knowledge, while another Lecturer-Unit participant at RS3 expected that by sharing knowledge he would become more powerful and could retain the knowledge better.

Unlike the two motivations discussed earlier with their various expected outcomes or further expectations, the sharing of knowledge motivated by obligation, responsibility, religious beliefs, and to get something in return did not obviously show the participants’ further expectations. Lecturer-Unit participants at RS1 shared knowledge because it was part of their obligation and regulated such as the sharing in *Tridharma* and Lecturer-Unit participants at RS2 shared knowledge in order to fulfil their *Tridharma* points. There was no explanation related to their expected outcomes. Similar to the obligation motivation, Lecturer-Unit participants at RS1 and RS3 did not indicate their expected outcomes when they shared knowledge motivated by responsibility. One Lecturer-Unit at RS3 stated that she shared knowledge just because it was part of her responsibility as one of the members in a unit, without mentioning what she expected to happen if she shared the knowledge. To get something in return is also one of the motivations to share knowledge for Lecturer-Unit participants at RS2. Yet, the Lecturer-Unit participant at RS3 did not illustrate the expected outcomes. One Lecturer-Unit participant at RS3, however, indicated that he expected outcomes by sharing knowledge and was motivated by reciprocity to get greater knowledge than what he shared. Furthermore, there was a quite interesting finding that the reciprocity did not necessarily happen during discussions and it did not mean that the return would be merely knowledge as well. Even though one Lecturer-Unit participant at RS2 did

not describe his expected outcomes by sharing knowledge motivated by reciprocity, he expected a return for the knowledge he shared to come later and that this might be ‘something good’ resulting in a good effect on him, as sharing knowledge was accepted as doing something good.

8.2.4. Lecturer-Teaching Participants

Table 8.8. shows the similarities and differences in what motivated Lecturer-Teaching participants to share knowledge. Lecturer-Teaching participants shared knowledge and were motivated by being acknowledged (recognition), the power of knowledge sharing, obligation, unifying, getting feedback (reciprocity), reaping tangible rewards, and “because they asked me to share.” Lecturer-Teaching participants at RS1, however, were not motivated by reaping tangible rewards and did so “because they asked me to share” when they shared knowledge. The differences were also related to the expected outcomes that each participant expected to achieve.

Table 8.8

Lecturer-Teaching Participats’ Motivations to Share Knowledge

Motivation to share	Participations		
	RS1	RS2	RS3
Completing each other	√		
Being acknowledged (recognition)	√	√	√
The power of knowledge sharing	√	√	√
Obligation	√	√	√
Influencing people	√		
Unifying	√	√	√
Getting feedback (reciprocity)	√	√	√
Delivering the correct teaching material	√		
Feeling as one/in the same team	√		
Donation	√		
Humanity	√		
Relationship with recipients		√	
Reaping tangible rewards		√	√
Because they asked me to share		√	√
To show respect		√	
Assurance		√	
”Saving the knowledge from extinction”			√
Maintaining self-image			√
Avoiding misunderstanding			√
Offering gratitude			√

There were similarities and differences related to the motivations to share knowledge among Lecturer-Teaching participants across the three research sites. When being acknowledged became their motivation to share knowledge, in general, the outcome was their happiness and pride. One Lecturer-Teaching participant at RS1, however, also had an expected outcome from the knowledge he shared. He expected that the recipients would believe him and he would get “more points” [increased social status]. Unlike the Lecturer-Teaching participants at RS1, one Lecturer-Teaching participant at RS2 expected that the recognition from the recipients would motivate her to share (more) knowledge. Whereas, one Lecturer-Teaching participant at RS3 expected that the knowledge she shared would motivate the recipients.

Lecturer-Teaching participants also had similarities and differences related to the expected outcomes if they shared knowledge motivated by the unification of material. Many Lecturer-Teaching participants talked about discussing teaching material in order to unify it or ideas with other colleagues who taught similar subject materials. The expected outcomes were dissimilar. One Lecturer-Teaching participant at RS1 expected that if they (him and the recipients) unified the teaching material or the examination questions, they would complete each other and they would produce a similar result. Lecturer-Teaching participants at RS2 were actually discussing similar topics (unifying the material), however, their focus was related to their relationship with the recipients (as team members). One Lecturer-Teaching participant at RS2 expected that by unifying, she could avoid mistakes such as teaching the wrong subject materials. Meanwhile, another Lecturer-Teaching participant at RS3 expected that by unifying the material, his students would receive similar lessons.

Lecturer-teaching participants had differing expected outcomes when they shared knowledge motivated by getting feedback from the recipients. A participant at RS1 expected that by sharing his research before it was published, this would improve his research. Meanwhile, a Lecturer-Teaching participant at RS2 had further expectations related to their position as lecturers in classrooms and their obligation to community. One Lecturer-Teaching participant at RS2 expected to learn more knowledge to enable her to work better as a lecturer. She felt that she was a junior who needed to learn more. Another Lecturer-Teaching at RS2 expected that she avoided teaching the wrong material as she received feedback. Another expected outcome was that the recipients would be motivated to submit the community service activities proposal. Different from Lecturer-Teaching

participants at RS1 and 2, a Lecturer-Teaching participant at RS3 was related to finding solution. The Lecturer-Teaching participant at RS3 further expected that she would receive the solution for her problem through feedback from the recipients of the knowledge she shared.

There were no clear expected outcomes that the Lecturer-Teaching participants expected to achieve in relation to their sharing of knowledge motivated by the power of knowledge sharing, obligation, reaping tangible rewards, and “because they asked me to share”. Overall, Lecturer-Teaching participants believed by sharing knowledge they would be stronger because their knowledge increased. Lecturer-Teaching participants admitted they shared knowledge because it was part of their obligation. Such as, they were obliged to share knowledge with the community or there was a policy requiring them to submit PDP reports. Lecturer-Teaching participants at RS2 and RS3 even though agreeing that financial reward was not the main driving force, also admitted that it motivated them to share knowledge.

Chapter Summary

Participants across four groups shared knowledge regarding *Tridharma* (such as teaching material, research methods, knowledge related to dedication to community) and Professional Development Programs key points, materials, reports, and the experience when they were attending a PDP). The application of *Tridharma* and PDPs are lecturers' obligations as lecturers in State Higher Educational Institutions in Indonesia. This obligation is influenced by organisational goals and strategies.

Participants also shared knowledge related to management. However, the groups of participants who shared knowledge in management are Top Management and Middle Management groups. Participants from the other two groups who do not hold any structural positions do not share knowledge related to responsibility in management such as policies, regulations, and information on organisational issues. Meanwhile, participants from four groups share knowledge in classroom management, such as how to handle classroom or administrative documents and reports.

Participants share knowledge related to their expertise. However, the sharing shows similar patterns across groups of participants. They only share knowledge related to their expertise within their department. Specialisation in an organisation affects the sharing of expertise. Even at management groups, the sharing of

knowledge related to expertise is horizontal and within department. Other areas of knowledge shared by participants across four groups of participants are religion and current affairs.

There is no significant difference on motivations to share knowledge among groups of participants as the result of the need to achieve the organisational goal and strategies. What knowledge is shared depends on what motivates the participants to share knowledge.

Across three groups of participants, the main motivation in sharing knowledge is to get something in return (reciprocity). The return itself can be direct and indirect. Second, participants feel that they must share knowledge, otherwise they will get sanction from employers. Participants who are in management groups share knowledge because it is part of their responsibilities as managers. Third, participants in this study share knowledge because they believe knowledge is power. In order to get more knowledge, they share knowledge because by sharing it, their knowledge will expand. Fourth, the participants share knowledge because they need to unify their ideas. Fifth, sharing knowledge is recommended in their religions. Sixth, intangible reward is viewed as important.

The motivations mentioned by participants are not clear because the motivation is usually followed by other motivations or further expectations. This causes difficulties in deciding whether the participants's motivation is intrinsic or extrinsic. Even though participants in general have similarity in motivations, the further expectations were quite different between participants who are in management groups and participants who are not in management groups.

The participants across three research sites prefer informal meetings to share knowledge even though they realise the importance of formal discussion in their organisations. Especially for participants in Lecturer-Teaching groups, they feel more relaxed in an informal meeting, because in that setting they see themselves as equal with others and managers. Meanwhile, managers describe the importance of sharing knowledge in a formal meeting. The managers always set a formal meeting after an informal meeting is conducted. The participants who are not in management group, however, feel afraid of talking in a formal meeting.

Four groups from three research sites choose the approach to share knowledge based on what knowledge was shared. There is no difference among groups of participants on the choice of approach. For example, when the knowledge shared is related to obligation and responsibility, the sharing of knowledge is

conducted in a formal meeting. It is common that after a formal meeting, an informal meeting follows.

Face-to-face interaction is seen as more polite than sharing information through IT. For managers, it is important to see the body language of the knowledge receivers.

The discussion of the findings is presented in the following chapter in order to understand the data on how knowledge sharing takes place at State Polytechnics in Indonesia.

The data is saturated as the further coding is no longer achievable. "*Data saturation is reached when there is enough information to replicate the study when the ability to obtain additional new information has been attained, and when further coding is no longer feasible.*" (Ness & Fusch 2015, 1408). Data saturation was achieved as indicated by the repetition of responses among those interviewed. Multiple revisions of the coding, outlier and contradictory cases were accounted for and the themes cross checked with supervisors served to account for the fact that no further coding was feasible. With sufficient number of participants, thick and rich data, this study is able to collect enough data to achieve the purposes of the study and further data collection would generate similar results and would only confirm the emerging themes. As was made clear in the literature review, there is no data available on KS in universities or polytechnics within Indonesia (hence the significance of this study) and so this study becomes the reference point for future studies across the country.

CHAPTER NINE : DISCUSSION

9.1. Introduction

The aim of this study was to explore knowledge sharing in state polytechnics in Indonesia. Chapter 8 presented the cross-case analysis of the findings presented in Chapters 5, 6, and 7 in order to investigate the similarities and differences of the data from four groups of participants from three research sites. This chapter discusses the results of the cross-case analysis with reference to the existing literature. This discussion focuses on: What motivates the participants to share knowledge? and What knowledge is shared at SPs in Indonesia? The discussion of what knowledge is shared includes the approach used and what organisational factors influence the knowledge shared, as well as the methods used to share knowledge.

Chapter 9 is organised into five sections: Introduction, the Three inter-dependent relationships, Motivation to share knowledge, What knowledge is shared, the Approach used for sharing knowledge, and the influence of culture and sub-cultures. The major themes that emerged from the data are organised according to the research questions and their sub-questions: RQ1: What knowledge is shared? With a sub-question the approaches to knowledge sharing (formal and informal) which discusses the formal and informal approaches, the methods, types of knowledge shared and how knowledge is created; RQ2: What motivated participants to share knowledge? Where the root of motivation is reciprocity. The motivations rooted from this motivation are it 'must be done', reciprocity, reward, and health. The discussion includes what organisational factors influence on how knowledge sharing takes place.

Even though RQ1 in this study examines what knowledge was shared, in order to understand the integrated relationship between RQ1 and RQ2, the findings from RQ2 will be discussed before the discussion on what knowledge is shared. The data showed motivation as an important part of the integrated system between motivation, what knowledge is shared, and the approach to sharing knowledge, which corresponds to evidence collected in the study conducted by Ipe (2003), Oye (2011), and Bock and Kim (2002) that found motivation as an important factor in knowledge sharing. Ipe argued that motivation is the determinant factor. To understand the relationship between motivations to share, what knowledge is

shared, and the approaches used to share knowledge, the discussion will begin with the explanation of inter dependent relationship between these three factors.

9.2. Three Inter-Dependent Relationships

There are three integrated relationships or inter-dependent relationships between what knowledge is shared at State Polytechnics in Indonesia, what motivated participants to share knowledge, and the approach to share knowledge. Ipe (2003) mentions the inter-dependent relationship of motivation, nature of knowledge, and the approach deployed to share knowledge. The integrated relationship is shown below:

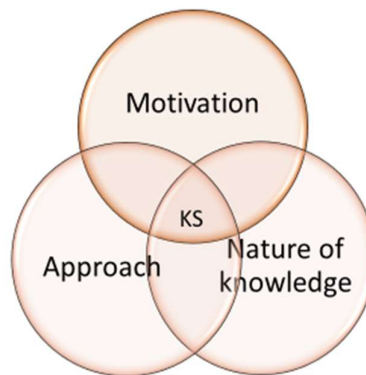


Figure 9.1: Adapted from Ipe's (2003, p. 352) integrated relationship for knowledge sharing (KS)

This study shows that the nature of knowledge is not part of the inter-dependent relationship. The integrated relationship is between motivation to share knowledge, what knowledge is shared, and the approach used. This study demonstrates that only motivation, which is not dependent on the other two factors in the inter-dependent relationship of motivation, what knowledge is shared, and the approach used. What knowledge is shared depends on the motivation to share knowledge while the approach used depends on what knowledge is shared. Different from Ipe's illustration on the integrated relationship above, this study illustrates that there is a dissimilar result in term of the relationship between a formal approach and an informal approach. Knowledge sharing takes place if there

is an integrated relationship between motivation, nature of knowledge and informal approach as illustrated below:

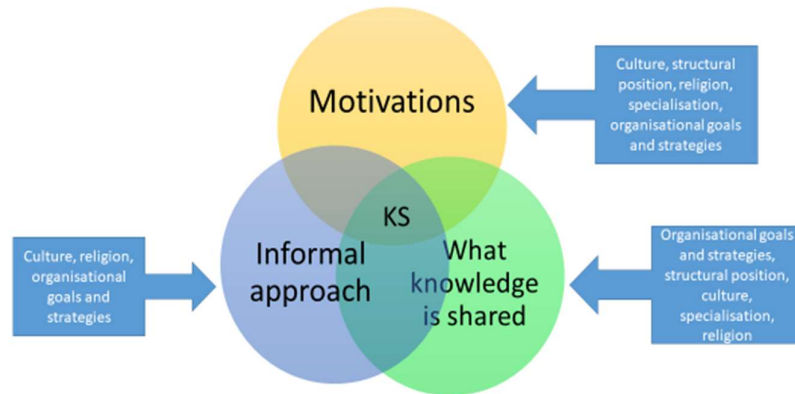


Figure 9.2. An integrated relationship between motivation, nature of knowledge and an informal approach

Meanwhile, this study reveals that the result of the integrated relationship between motivation, what knowledge is shared, and a formal approach is not knowledge sharing, but knowledge transfer. However, if in a formal meeting there is encouragement from the leaders/seniors (leaders' stimuli), knowledge sharing happens. The diagram which illustrates this finding is presented below

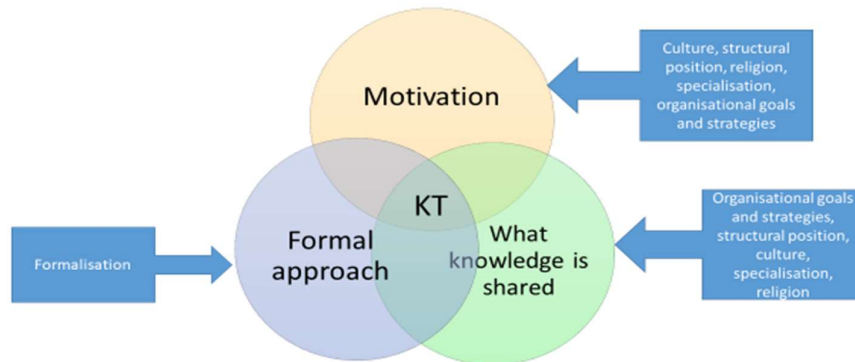


Figure 9.3. An integrated relationship between motivation, what knowledge is shared and a formal approach

The diagram below shows that in the end, motivation is the crucial factor for knowledge sharing to take place. The role of motivation, however, is to initiate the knowledge sharing. In order that the actual knowledge sharing happens in a formal meeting, leaders must encourage the subordinates to share knowledge. Without leaders' stimuli, knowledge transfer occurs, but not knowledge sharing (the exchange of knowledge).



Figure 9.4. Motivation as an initiator of knowledge sharing

Each factor in the integrated relationship is influenced by organisational factors. Culture, organisational goals and strategies, structural position, religion, and specialisation influence motivations and add to what knowledge is shared by the participants in this study. Meanwhile, the formal approach was influenced by the formalisation and leadership in bureaucratic organisations while the informal approach was influenced by culture.

9.3. Motivations to Share Knowledge

The root of motivation to share knowledge found in this study is to get something in return (reciprocity). The participants indicate that they share knowledge because they expect something in return, which can be tangible or intangible. The reciprocal return is not always required to be knowledge. It can be in the form of support, for example. The findings in this study are slightly different from those of a previous study conducted by Ipe (2003) which demonstrated reciprocity as one sharing motivator meaning that the benefit of the sharing is mostly receiving knowledge. Therefore, it can be concluded that the participants in this study share knowledge because it is their intention to share knowledge. This

finding is related to Gagné (2005) and Ipe's (2003) studies on motivations to share knowledge. They argue that sharing knowledge is a conscious activity. They claim that when one shares knowledge, he or she knows that he or she is sharing knowledge and why he or she shares knowledge.

9.3.1. Intrinsic and Extrinsic Motivations

This study found evidence of intrinsic and extrinsic motivation to share knowledge. Intrinsic motivation was evident in the perceptions of the power of knowledge sharing, reciprocity and health. Extrinsic motivations were reflected in participants' reference to obligation, responsibility (relationship with recipients), and reward (recognition and tangible rewards). The sub-question this study aspired to answer was Why participants shared knowledge. Accordingly, some participants mentioned self-satisfaction or feeling happy (altruism or intrinsic motivation), however, generally, participants actually needed to achieve something, or extrinsic motivation. In other words they were motivated not just simply by self-satisfaction. Intrinsic and extrinsic motivations to share knowledge, however, are not consistent as the result of the inconsistency of the definitions of intrinsic and extrinsic motivations themselves, a self-reinforcing cycle as they trigger each other, and further expectations.

9.3.1.1. The Inconsistency Definitions of Intrinsic and Extrinsic Motivations

Some inconsistency was evident as to whether the motivation was intrinsic or extrinsic. This corresponded to western theories, which also showed inconsistencies. For example, Hung et al. (2011) in their study stated that reciprocity is an extrinsic motivation. However, according to Ipe (2003), reciprocity is an intrinsic motivation. It could be reasonably assumed that it is a matter of definition or, the presupposition that there is an extrinsic and an intrinsic aspect that operate separately. It may also be because motivation is the combination of intrinsic and extrinsic motivation or because the difference between intrinsic and extrinsic motivation is not clear as explained by Andriessen (2006). Findings from this study revealed that intrinsic and extrinsic motivations depended on what participants understood and on what had driven them to share knowledge.

9.3.1.2. Self-Reinforcing Cycle of Intrinsic and Extrinsic Motivations

This study also found that the inconsistency between intrinsic and extrinsic motivations was caused by the relationship between intrinsic and extrinsic

motivation which can be described as a self-reinforcing cycle. The cycle could start with either. The outcomes of this study described that an extrinsic motivation could encourage or initiate intrinsic motivation as well. For example, some of the participants declared that they were motivated by recognition (for example, people used their journal articles as reference) when they shared knowledge. This recognition, however, encouraged them to share more knowledge because they felt happy with the recognition. The participants then shared more knowledge to gain further recognition. This finding was similar to Akin-Little and Little's (2009) argument regarding the effects of extrinsic motivation on intrinsic motivation. They explained that extrinsic motivation could strongly reinforce intrinsic motivation. Moreover, a study by Cabrera, Collins, and Salgado (2006) claimed that recognition or acknowledgement could raise intrinsic motivation.

The experiences of participants revealed that intrinsic motivation could trigger extrinsic motivation. This happened when the participants shared knowledge motivated by reciprocity (intrinsic), or the power of knowledge sharing. They realised that by sharing knowledge, they would gain more power (knowledge). They used this power so that they could stay in their structural position, or be re-elected again in the next round (motivation became extrinsic). Even though some participants (Top Managers) were at the top level, they still shared knowledge so they gained more knowledge to make them more powerful. Accordingly, the findings showed there was no overriding dominance between intrinsic and extrinsic motivations. Research conducted by Osterloh and Frey (2000) showed dissimilar conclusions to the outcomes of this present study. Osterloh and Frey's study demonstrated that an intrinsic motivation was the most influential motivation in sharing knowledge. Frey and Osterloh (2002) study on employees' motivations at the workplace even illustrated that extrinsic motivation could inhibit intrinsic motivation. Contradicting this, the findings of this study suggested that extrinsic motivation did not harm intrinsic motivation, a finding that was supported by research conducted by Ledford et al. (2013) on the negative effect of extrinsic motivation on intrinsic motivation. The study by Ledford et al. concludes that extrinsic motivation does not impede intrinsic motivation. In addition, the present study could further demonstrate that intrinsic and extrinsic motivation could initiate each other as they move in a cycle.

9.3.1.3. Further Expectations of Intrinsic and Extrinsic Motivations

Another factor which caused the inconsistency of intrinsic and extrinsic motivations is the further expectation. Further expectations are influenced by culture. The participants in this study do not only mention what motivated them to share knowledge, they also explained their further expectations when they shared knowledge. Therefore, the motivation to share knowledge was not the end in itself. That is to say, even though the participants had similar motivations to share knowledge, their further expectations were different and these outcomes were not just hopes, they were expectations. For example, the participants acknowledged they were motivated by the need to be recognised and the further expectations or the expected outcome of this recognition incurred promotion or acknowledgement by peers and eminence. The participants shared knowledge in order to be recognised (as a model, people would always come to them), so that the senders of the knowledge could secure their job or position (as Top Managers), increase their relationship with others, and increase their status and power.

These further expectations correspond with evidence from studies on motivation conducted by Andriessen (2006), and Frey and Osterloh (2002) and Osterloh and Frey (2000), and Hall (2001). Their studies show that other further expectations often appear following the motivation to share knowledge. The participants in this study also claimed that less tangible rewards such as recognition and acknowledgement were a stronger motivator than tangible rewards. This supports a study conducted by Wasko and Faraj (2005) which found less tangible rewards such as enhancing reputation strongly motivated the sharing of knowledge.

Further expectations motivated by reciprocity, for example, varied according to individual participants. They described outcomes as: good things would come to them one day (because they did good things such as sharing knowledge). For example, they would get help if they faced problems at a later time, or God would reward them, the sharing (good deed) would be their prayer when they died, and they would create harmony as the balance between humans, nature and Gods. Another expected outcome was trust. They shared knowledge because they expected they would receive not only knowledge, but also trust from the recipients. This expectation was connected to being recognised as one of the motivations to share knowledge, discussed previously. If they gained trust from the recipients as the result of sharing knowledge, they might receive votes (to stay in their structural positions) or their work (publications) might be used as references.

Another significant further expectation that emerged from the question of the motivation to share knowledge, such as from reciprocity, was the different expectations between the participants who held structural positions and the participants who held lesser positions or no position at all. The participants who held a high structural position needed consensus from the recipients so that when the Managers decided to start a program or released a new policy, they would receive the subordinate support. People (subordinates) would agree with their program or new policy. For Top and Middle managers, a further expected outcome revealed in the present study was that the need for consensus was motivated by reciprocity. Therefore, a planned program or a regulation which was designed would run smoothly in practice. This phenomenon could be related to *musyawarah untuk mufakat* explained by Kawamura (2011) and Hanafi (2013). Kawamura (2011) and Hanafi (2013) argued that the sharing of information (in a meeting) is aimed at consensus to get support or agreement on new programs.

For participants who did not hold high structural positions, the further expectation was that the support from recipients gave them a sense of confidence that the knowledge they received was correct. As long as the recipients agreed with the information or knowledge they shared by giving supportive feedback, they were motivated to share knowledge. This 'supportive feedback' is actually about collectivism or being part of the group. The participants were afraid of being different from other members. This finding is relevant to the research conducted by Acharya and Layug (2016) and Tamaki (2006). Their studies describe *musyawarah* as Southeast Asia's heritage which emphasises the need for consensus for collective identity (common identity) among the Southeast Asians. Participants in the present study also expected that the knowledge they shared with recipients, would be used by them to help the participant when they encountered problems at a later date (indirect reciprocity).

9.3.2. The Motivations to Share Knowledge and the Influence of Organisational Factors

The participants across three research sites from four different groups were motivated by giving something back (reciprocity), mainly because of gratitude and receiving something in return when they shared knowledge. This reciprocity is the motivation that delivers other motivations such as tangible rewards (for example the obligation to share knowledge related to *Tridharma*) and the power of knowledge sharing. The feeling of gratitude which led to reciprocity was very

important in knowledge sharing according to Bock and Kim (2002), Ardichvili et al. (2003), Emmons (2004), and Komter (2004) in their studies. They note that gratitude obligates the receivers to return the benefit (in this study the benefit was knowledge). Huang and Chen (2015), Ardichvili et al. (2003) and Wasko and Faraj (2000) explain the feelings of obligation as a moral obligation. These studies show that reciprocity which happens because of gratitude involves social obligation in the form of moral obligation. Accordingly, the participants in this current study tried to be active in discussion, by giving feedback or ideas. When the givers shared knowledge with them, they felt grateful and believed they also needed to share knowledge.

Religion also influenced the gratitude in reciprocity motivation and the power of knowledge sharing motivation. Many participants indicated that the values in their religion influenced them to share knowledge. Gratitude, as discussed earlier, emerged as an important trigger for reciprocity. Previous sections showed that because of gratitude, the participants as receivers felt obliged to share knowledge back to the persons who shared their knowledge. Related to religion, Hambali et al. (2014) on gratitude as "*syukur*" in Islam and gratitude in the Hindu faith (Kementrian Pendidikan dan Kebudayaan Indonesia, 2014) support the findings of this study which showed religion is an influence on the motivation to share knowledge. Driven by their religious beliefs the participants specified gratitude as a consideration in reciprocity.

The participants shared knowledge as part of their gratitude for receiving (from God). One of the forms of their gratitude was giving back (sharing back) to others or doing good deeds. This resembled what Hambali et al. (2014) argued: that one of the verses in the Qur'an uttered that God blessed those who did good deeds. The outcomes from this study revealed that participants shared knowledge in order to do good deeds. Participants in this study also described that after giving or sharing, they also expected something back from God, such as God's help (this might be through other people) or rewards. This corresponds with the Qur'an; that we are obliged to thank God, and if we do things that show our gratitude, we will receive something back if we thanked God (for what He had given to us), God would give more.

Reciprocity in the findings was not only about the participants returning the knowledge they had received by giving feedback or sharing their knowledge in a discussion, but also indicated that the participants anticipated the recipients' gratitude. Studies related to reciprocity in sharing knowledge such as those

conducted by Kankanhalli et al. (2005), Molm et al. (2000), and Schultz (2001) exposed that in knowledge sharing, people expected the reciprocation of knowledge. Although the participants in this study predicted there was always a possibility that recipients would share something in return, the data also demonstrated that in sharing knowledge, the participants as senders of knowledge did not necessarily expect knowledge from the recipients in return. The return of the sharing might be knowledge, but it could also not be in form of knowledge. That is to say, there was no expectation of a one for one exchange.

Even though the sharing is an obligation because they say they “must share”, the participants in this study still expect something in return when they share knowledge. When their motivator is purely because they expect new knowledge from the recipients (of the knowledge they share) or when the sharing is influenced by *Tridharma*, the participants expect a reward (tangible or less tangible) in return. Tangible reward such as financial reward, however, was not found as a strong motivation. Motivation, such as the power of knowledge sharing clearly showed that the participants shared knowledge because they expected something in return. When their motivators are religion and health, the return of the sharing activity tends to be an indirect reciprocity. Participants, however, did not expect an immediate return believing it would be received, one day. The participants’ motivations to share knowledge are: reciprocity (it must be done (responsibility, obligation, “because they asked me to (share))), religion, to gain support, “Because they ask me to (share), the power of knowledge sharing, and health.

9.3.2.1. Reciprocity as the Root of Motivation to Share Knowledge

Organisational factors such as cultures (national culture and sub-culture/local culture), organisational goals and strategies and specialisations influenced the participants’ motivation to share knowledge. Indonesian’s characteristics such as the high Power Distance Index (PDI), uncertainty avoidance, and collectivism, support knowledge sharing to take place as these characteristics are behind the responsibility motivation. Religion as a factor which contributes extensively to Indonesian culture impacts strongly on motivation to share knowledge, to be recognised, to shoulder responsibility, to show gratitude, to understand the power of knowledge sharing, and to get support. Hofstede’s cultural dimensions about Indonesian culture are relevant to the findings of this study as Hofstede’s cultural dimensions could be interpreted to explain why the participants behaved as they did.

The participants in this study, however, also expected other paybacks besides knowledge, such as, blessings, rewards, or help from other people or God; or that the recipients of the knowledge would share the knowledge they received with other people. They believed this would ensure they received further reward (from God). Moreover, the participants did not really expect that reciprocity would happen immediately when they shared the knowledge. They explained that the return would come later indirectly. This indirect reciprocity parallels a study conducted by Nowak and Roch (2006). Nowak and Roch's study explains that it is possible that the return of something which is given or shared (by the givers) might not come directly from the receivers (recipients). The givers expected that if they shared knowledge, other people or God would help them one day (downstream indirect reciprocity). The givers also expected that the recipients would re-share the knowledge they had shared with other people (upstream reciprocity). This study shows that as the result of indirect reciprocity, the participants were not always motivated by receiving instant knowledge in return from recipients when they shared knowledge.

Culture, especially local culture, influenced reciprocity as a motivation to share knowledge. Local culture noticeably influenced reciprocity at RS1 when motivation to share was triggered by gratitude. *Tri Hita Karana* was important to keep harmony (balance). *Tri Hita Karana* encouraged sharing in order to balance humans, nature, and Gods, which in the end was to achieve harmony, because according to *Tri Hita Karana*, every human being deserved similar things (Astuti, et al, 2011). Therefore, if participants received knowledge, they shared it, because other people deserved similar knowledge. This was consistent with a study conducted by Padmi and Sanjaya (2015) about the importance of harmony in *Tri Hita Karana* which is built on gratitude. Accordingly, participants shared knowledge because they believed that if they shared knowledge, they would create a balance between humans, God, and nature.

9.3.2.1.1. "It must be done"

The findings revealed that the sharing of knowledge took place because participants believed they were 'obliged' to do it. Knowledge exchange happened because it was their responsibility, obligation, religion, a way to gain support, and because "they asked me to" (share). This finding contradicted studies conducted by Lodhi and Ahmad (2010) and Mergel et al. (2008). In their studies, the results describe voluntary engagement in knowledge sharing. Other studies on motivation to share knowledge conducted by Harder (2008) and Kaser and Miles (2001) also

define knowledge sharing as a voluntary action which differ from the findings of a study conducted by Michailova and Husted (2001). Michailova and Husted found that knowledge sharing should be forced initially to create a culture of knowledge sharing. The results of Michailova and Husted's study are relevant to the findings in this study which showed knowledge sharing can be forced. Michailova and Husted's study on the reason behind the forced knowledge sharing, however, is somewhat different from this study results. Michailova and Husted's study describes the need for forcing knowledge sharing when knowledge hoarding for personal benefit is happening. The findings in this study did not indicate that the participants were reluctant to share knowledge because they hoarded their knowledge. Therefore, forced sharing is needed. The participants explained that forced knowledge sharing took place for several reasons such as to fulfil their obligations, responsibility, and because they need a strong force in order to overcome their feeling of inferiority. It is not about knowledge hoarding.

In this study forced knowledge sharing occurred in order to fulfil obligations and responsibilities. The participants' responsibilities and obligations as lecturers, members of a Management Team, and as part of a community forced them to share knowledge. Requested, forced, or being obliged to share knowledge in this study refers to the sharing of knowledge (knowledge exchange) which must be conducted otherwise there would be sanctions from supervisors such as no promotion or no extra salary; or moral sanctions such as feeling guilty for not providing the students with similar teaching materials or treatment, or social sanctions (being called 'stingy').

Since the participants were lecturers in this study, the obligation to share knowledge emerged as a common motivation. The participants shared knowledge because they felt that they were obligated to share knowledge in order to fulfil their *Tridharma* requirement or obligation as lecturers. Otherwise, there will be sanction as mentioned earlier. For example, the participants shared teaching material because they were part of a team of lectures teaching particular topics and in order to design similar textbooks, they had to share with each other (knowledge exchange). The sharing around the lecturer's obligation was similar to what Abdillah (2014) stated in his study that *Tridharma* was the core of knowledge creation and distribution in HEIs in Indonesia, where lecturers' activities were related to the implementation of their obligations as lecturers.

The findings illustrated that the participants also acknowledged that if they could not fulfil their requirement as lecturers, the sanction would be that they could

not raise their rank as lecturers as stated by DIKTI (2014) and DIKTI Decree No. 37, 2009 (Pemerintah Republik Indonesia, 2009). The participants also believed that lecturers' activities must revolve around the fulfilment of their obligations. This idea aligned with a study conducted by Lubis (2004) who argued that *Tridharma* was a strategy to achieve the objectives of HEIs in Indonesia. Clearly, this study illustrates that organisational goals and strategies (*Tridharma*) influenced obligation as one of the participants' motivations to share knowledge. For that reason as well, they shared knowledge because they had to.

In the present study, "Because they ask me to (share)" determined why participants in the Lecturer-Teaching group shared knowledge. These participants indicated that they felt reluctant to share knowledge when they were not asked to share in formal meetings. They explained they would share knowledge only if they were asked. This reluctance indicated they recognised their perceived social obligation to share as well as their awareness of their social status. They admitted that sometimes in a formal meeting they felt inferior, because many colleagues were more senior (Lecturer-Teaching participants did not hold any structural position) indicating the impact of hierarchy on their feelings of confidence.

The experiences of the participants also revealed that knowledge sharing in the sites investigated could also be driven by their responsivity (obligation) as lecturers or their sense of responsibility as managers. Participants in this study who held certain structural positions mentioned they are obligated and responsible for sharing knowledge (other than knowledge related to *Tridharma*) as members of management. However, no sanctions were imposed if they did not share knowledge, which indicated that sharing knowledge was actually a moral obligation or responsibility. Similar to this study, a previous study conducted by Mici (2015) discusses a leader's responsibility in sharing knowledge. The knowledge might be retrieved from their experience, for example.

Participants described how leaders were expected to 'guide' sub-ordinates by providing them with the correct knowledge. This finding paralleled Mici's (2015) and Bryant's (2003) statements that leaders were the main agents and facilitators in the process of creating, sharing, and exploiting knowledge in an organisation. The participants who were part of a management team believed that as leaders they needed to guide subordinates to implement new policies and practices to achieve the organisation's goals. The findings from the present research were in accordance with a study conducted by Pramono (2013). In his study Pramono claimed that leaders (managers) must guide the subordinates so that the subordinates know how

to work in order to achieve the organisation's goals. Accordingly, the participants in this study explained that leaders were expected to be knowledgeable and the source of information. This corresponds with what Melo et al. (2013) and Irawati (2004) claimed in their studies that a leader was expected to be knowledgeable. Melo et al. adds that a leader who facilitates the sharing of knowledge and actively shares knowledge, is knowledgeable. Irawati (2004) says that a leader has access to information due to his/her position in an organisation. Irawati's study describes that a leader should be the supplier of information.

Responsibility to share knowledge as managers was another motivation influenced by culture in this study. Participants in this study who held structural positions wanted to be ideal leaders, and so became models for their subordinates. One of the ways to achieve this was to share knowledge which was viewed as their responsibility. This is related to the importance of position and reputation in sharing knowledge in Indonesia. Participants explained that according to the culture in Indonesia a leader was like 'a father' who had to guide or look after 'his children' (the subordinates), therefore, leaders must look after the subordinates so that the subordinates would do the right thing. According to Andriansyah (2015), being a leader was more than a 'boss's job'. A leader must be able to look after his or her subordinates. Looking after the subordinates was also in line with Whitfield's (2016) argument that because of the influence of Islam and Javanese cultures in Indonesian culture, superiors normally expected respect and obedience from subordinates in the workplace as, in return, it was the responsibility of the leaders to look after subordinates. Andriansyah (2015) discussed leaders as those who had responsibilities using Siagian's 24 characteristics for ideal leaders, one of which was having educational expertise. Having educational expertise indicated that a leader must not only be able to share knowledge, but he or she must be able to shape the attitude and character of his or her staff. This study revealed that managers tried to be models for subordinates so they could guide the subordinates to the right path to achieve the organisation's objectives.

9.3.2.1.2. Religion

Religion was another motivation to share knowledge. Religion not only as an influence on gratitude in reciprocity, but religion is the motivation itself. Participants clearly stated that religious beliefs such as Mohammad and Mohammad's friends, the hadiths, along with what was stated in the Quran were their motivation for knowledge sharing. Participants explained they believed that religion provided both the sense of obligation and a clear sense of a reward for

sharing knowledge. According to Kumar and Rose (2012) knowledge sharing is grounded in major religions. Hidayatollah (2013) and Mohannak (2011) explain that the values of Islam encourage Muslims to share knowledge and give advice to each other in order to receive God's blessings. This view correlates with what the Muslim participants in this study stated. Hindu participants focused on a balance in life as the motivation for them to share knowledge. This belief is stated in Tri Hita Kirana as explained by Astiti et al. (2011).

9.3.2.1.3. To Gain Support

Participants were motivated to share knowledge to gain support. In sharing knowledge they expected that recipients agreed with what they shared and believed that the knowledge they shared was perceived as correct by the recipients. By sharing knowledge and receiving agreement the participants gained confidence in the knowledge they had. They achieved consensus because the majority of the receivers were in agreement with the senders' ideas or knowledge. This finding is consistent with studies conducted by Kawamura (2011). Kawamura explains that in a meeting, the intention is to achieve a consensus. Consensus itself is part of Indonesia's Five Principles and it is the traditional decision-making rule of *musyawarah untuk mufakat* (Kawamura, 2011).

The motivation to gain support was influenced by culture especially collectivism, uncertainty avoidance, and high PDI. These were three aspects of Indonesian culture explained by Hofstede (2009). The influence of collectivism in this study reflected the importance of people's opinion (positive opinion) that ensured participants did not feel excluded, that they felt part of the group and felt they were supported. The influence of uncertainty avoidance, was also one of the characteristics of Indonesian culture that made the participants feel the need for harmony with group members. Furthermore, the participants who were not in the Lecturer-Teaching group shared knowledge as an expected outcome was for them to gain support at a later date. This expected outcome, which will be discussed later, also showed in-group dependency (collectivism). In addition, the participants who held high structural positions demonstrated high uncertainty avoidance and collectivism. They expected to get support and they did not want the subordinates to oppose them when they established a new program. The participants were afraid of making incorrect or un-supported decisions and fearful of creating conflict with those who had dissimilar opinions. Whitfield (2016) explained that one of Indonesians' noticeable characteristics was the fear of making a wrong decision.

9.3.2.2. The Power of Knowledge Sharing

Knowledge sharing in this study was motivated by the belief that knowledge was power. The participants shared knowledge in order to gain more knowledge to empower them. When asked about their understanding of the phrase 'knowledge is power', most participants believed that having knowledge meant they had power and that as the result of reciprocity, the more they shared, the more knowledge they had and the more powerful they would be. They claimed that one of the ways to have more knowledge was by sharing the knowledge, since the recipients would share knowledge back to them. They were not worried that if they shared knowledge, they would lose power, as by not sharing they would have less knowledge.

The results of this study indicated that the understanding of knowledge sharing as a tool to acquire more knowledge (power) came from the characteristic of knowledge when it is shared. The participants in this study argued that knowledge was not tangible. Knowledge is abstract and it will 'grow' when it is shared. A similar finding was reported in a study conducted by Egbu et al. (2005) who claimed that knowledge was abstract and could grow or expand when it is shared. This study's conclusions also revealed a similar assumption to studies conducted by Mici (2015), Kolm (2008), Davenport and Prusak (2000), Sveiby (2001), Bhirud et al. (2005) which demonstrated the nature of knowledge which can 'expand'. Their studies illustrate the knowledge one shares will develop as the result of feedback from recipients.

Sharing knowledge leads to power. As the result of the Power Distance Index (PDI), leaders are well respected and many people intend to be leaders. High PDI influenced the participants in this study's motivation to share. The participants, especially those who held structural positions, admitted that they shared knowledge because they needed to be acknowledged, which in turn meant that they would be well respected and hold a high position. This finding parallels a study conducted by Saleh and Munif (2015) which demonstrated that Indonesians tend to chase status rather than wealth in relation to structural positions. Indonesians predominately work hard in order to get promotion, not to get a better payment, but to get higher status among other members within their institutions. They believe that a better position will lead to a better payment anyway. Saleh and Munif's study shows that it was part of the culture in Indonesia, especially for those who have high positions, to maintain their good reputation because the culture recognises people in high positions more highly than others. The culture encouraged them to be models for

sub-ordinates. They shared knowledge because they needed to have a good reputation not only when they had a high position, but also when they were 'only' lecturers. Therefore, the conclusions drawn from this study suggest that the cultural high PDI supported participants' need to acquire more knowledge by sharing, as they perceived this would result in them becoming more powerful.

9.3.2.3. Knowledge Sharing Motivated by Health

The findings in this study revealed that the participants believed if they shared knowledge it would increase memory (retention) and help to prevent dementia (pikun). This idea correlates with the results of studies conducted by McEvoy (2012), Bennet (2006), Debowski (2006), and O'Toole (2000) which explain that knowledge sharing is actually learning; in other words exercising the brain (keeping the brain active). Related to preventing dementia by sharing knowledge, the results in many studies related to dementia or Alzheimer disease indicated that brain exercises or learning was encouraged to prevent dementia and would assist dementia patients. Two collaborative DCRC's dementia research studies conducted by Farrow and O'Connor (2012) and Woodward et al. (2007) claimed that learning (part of the mental exercise) was important in preventing dementia, strengthening memory, and avoiding stress and depression. Moreover, Farrow and O'Connor's study shows that social activities, especially face to face interaction could also postpone the onset and reduce risk of dementia forming in individuals. A study conducted by Atkociūnienė et al. (2006) explains that sharing knowledge is a social activity especially the face-to-face engagement in the process. The data in the present study showed that some of the participants shared knowledge (as sharing is learning) to activate their brain and strengthen their memory, to prevent dementia (pikun), and to avoid stress. Research in the field of dementia prevention and possible cures, however, is still ongoing.

The participants also believed that by sharing the knowledge they have, they are actually 'saving' their knowledge to recipients. When their knowledge is transferred to another, the knowledge is saved to the recipients' memory. Therefore, there is no need to be worried should they forget the knowledge, as the recipients could remind them. Their motivation is similar to the findings of a study by Bessick and Naicker's (2013) on the importance of knowledge retention for an organisation to remain competitive where knowledge sharing plays an important role in knowledge retention. Therefore it can be argued that by sharing knowledge, the

knowledge stays in the organisation as other members in the organisation will remember the knowledge.

9.4. The Knowledge Shared (Related to Obligation, Responsibility, Expertise, and Religion) and the Influence of Organisational Factors

The other question this study aspired to answer is: What knowledge is shared. In this study, it can be seen that motivation to share knowledge influenced the knowledge to be shared. For example, if the participants were motivated by their obligation as lecturers, they shared knowledge related to *Tridharma* (Abdillah, 2014). The knowledge shared by the participants was related to their job description as lecturers in Indonesia (teaching material, research methods including journal reviews, sharing knowledge with the community, knowledge related to Professional Development Programs such as a report or key points). Also their responsibly as members in an organisation who held certain structural positions or responsibilities (policies, regulations, information related to organisation issues), expertise, current affairs, religions, and a unit's service.

The findings of previous research conducted by Babalhavaeji and Kermani (2011) is consistent with evidence from the present study. Babalhavaeji and Kermani explained that the areas of knowledge sharing in HEIs were teaching (such as teaching materials, teaching methodology, experiences and knowledge), conducting research (such as collaborative books, collaborative articles, collaborative research projects), and membership of professional associations (journal editorial committees, and participation in reviewing journals article). The study conducted by Babalhavaeji and Kermani, however, did not indicate that even though the participants were all lecturers, their structural position influenced what knowledge they shared. The participants who did not hold any structural position in this present study did not share information on policies or regulation. Hierarchy in the organisations (the responsibility area of knowledge) determined that participants who held structural positions, either as Top Managers or Middle Managers, shared policies, regulations, management, or administrative issues (Top Down). The sub-ordinates in this study did not share this area of knowledge. In addition, Babalhavaeji and Kermani's study does not suggest that the areas of knowledge sharing in HEIs also include religious topics and current affairs whereas the present study described other areas of knowledge sharing such as, religion and

current affairs. This finding adds information to Babalhavaeji and Kermani's as the areas of knowledge shared by lecturers are broader. Participants shared religious topics because as discussed in the motivation section, they were influenced by the values and teachings of their religions. Some of the participants often used their free time to meet each other in lecturer's rooms where discussion took place naturally. This was influenced by religion (*silaturahmi*) and culture, especially the collective culture of Indonesians (discussed earlier).

A State Polytechnic in Indonesia consists of many lecturers with different educational backgrounds or expertise. Most participants usually shared with colleagues who had similar educational backgrounds or expertise and what they shared depended on their expertise and the service their unit provided. Participants who were active in the entrepreneurship unit provided information or training related to entrepreneurship such as how to set up a mineral water business. Meanwhile, participants who were teaching in the Business Administration Department shared knowledge or information related to management. Gumus and Onsekiz (2007) claimed in their study that people were more likely to share knowledge with their own group. This was what Daft (2010) explained as specialisation. Clearly, the data from this study revealed that specialisation in the organisations lead to the sharing of expertise within their specialisation.

9.5. Approaches to Share Knowledge

The approach or opportunity to share knowledge can be carried out formally and informally. Knowledge exchange, is a crucial element of the integrated factors in knowledge sharing: namely, motivation, knowledge, and approach. It is evident that leaders influenced knowledge sharing by providing the opportunity and encouraging the subordinates to share knowledge in formal and informal discussions. The studies by Bradshaw et al. (2015), Melo et al. (2013), Harder (2008) showed that leaders are able to influence the subordinates' motivation to share knowledge. These studies, however, do not mention whether the encouragement to share knowledge happens during discussions (opportunity or approach to share knowledge) as the participants in this present study expressed. The participants in the present study had many occasions and opportunities to share knowledge due to the frequency of meetings especially for the participants who held a structural position. However, without the encouragement or pressure to share knowledge in the meetings, knowledge exchange did not take place even though knowledge transfer might happen.

Formal and Informal Approaches

What knowledge is shared determines the approach used to share knowledge. For example, if the knowledge shared is related to obligation or responsibility, the sharing is conducted mainly through a formal approach as the result of formalisation in bureaucratic organisations in Indonesia. The formal meeting is normally followed by informal discussion. The findings in this study were not parallel to a study conducted by Ipe (2003). Ipe in her study described that the nature of knowledge (tacit and explicit sides of knowledge) influenced the approach or mechanism to share knowledge. The results of the present study, however, found that the nature of knowledge did not strongly determine the approach for sharing knowledge. This study revealed that what knowledge was shared was one factor which decided the approach deployed to share knowledge. Besides formalisation (in bureaucratic organisations in Indonesia), culture (High Power Distance Index (PDI), Collectivism, and Uncertainty Avoidance of Indonesian Culture) also influence the approach deployed in sharing knowledge.

9.5.1. The Influence of Formalisation

The importance of formalisation in an organisation as part of the organisational factors mentioned by Daft (2010) impacts on the use of the formal mechanism for sharing knowledge. In this study, formalisation was a factor that encouraged knowledge sharing. For example, the formalisation of sharing research methods in an Academic Forum such as at RS1, was reflected in the obligation to fulfil *Tridharma*, and to submit Professional Development Program reports for lecturers. This sharing was more organised and occurred through formal procedures. The participants in this study shared their knowledge in Academic Forums in order to receive feedback from the recipients to improve their research.

Harder (2008) in a study on factors which influence knowledge sharing shows that knowledge sharing is a voluntary process where participants in a discussion share knowledge voluntarily. Harder remarks that there should be no pressure from outside the individual. Chen and Huang (2007) conducted a study on the formalisation of knowledge sharing. Their study indicates that the formalisation of knowledge sharing is disadvantageous. Formalised approaches to sharing knowledge through a formal forum or formal procedures might be considered as a pressure. The findings in this study showed that besides being a voluntary process, knowledge sharing could also be requested or forced. The outcomes of this current study also revealed that formalised knowledge sharing obviously activated

knowledge sharing. A study conducted by Islam et al. (2012) on the influence of organisational factors in Malaysian MNCs support this study's findings. They reported that as one organisational factor, formalisation, contributed positively to knowledge sharing in organisations.

Informal meetings followed by formal meetings were also influenced by formalisation in bureaucratic organisations such as State Polytechnics in Indonesia. Top Managers set up a formal meeting as a follow up to an informal discussion so that the ideas shared in the meeting were documented. This finding was comparable to what Leidner et al. (2006) explained about practice approach (eastern approach). They stated that in a practice approach, inefficiency might happen as the result of abundant ideas in an informal sharing with no structure to implement the idea. Realising this fact, Top Managers in this study revealed that they tried to summarise or follow up the informal meeting by setting up formal meetings so that the ideas were documented. From documented ideas, Top Managers had reference or 'power' to follow up or realise the ideas.

9.5.2. The Influence of Culture

Culture negatively influenced the approach to share knowledge, especially in formal discussions as the result of high PDI, collectivism, and the uncertainty avoidance characteristics of Indonesian culture. The formalisation seemed to override the informal approach, which could reasonably be assumed to be related to the sharing of knowledge obligation or responsibility and the limited time given to formal meetings. The High Power Index of Indonesian culture created seniors-juniors' relationships in formal meetings while collectivism kept harmony within the group. Clearly participants with lower ranks or no structural position felt reluctant to share knowledge as they were uncomfortable about talking (communication apprehension). This finding was similar to a study conducted by Frantz et al. (2005). Their finding showed that when the participants in a formal meeting were different in rank, communication apprehension occurred. Moreover, the findings of this study illustrated that even though the participants knew the topic that was discussed in a formal meeting, they would not share any feedback or information. The juniors felt that the seniors "already know the knowledge" they had.

The inferiority influenced by culture (High PDI) in Indonesia inhibits knowledge sharing. A study conducted by Thongprasert and Cross (2008) supports this finding. They argued that knowledge sharing was inhibited by how individuals

perceived rank (status). The present study also demonstrated that participants were worried they might embarrass or make someone “lose face” by their comment or make the senior feel underestimated. This finding was also reflected in a study conducted by Burn and Thongprasert (2005) who argued that two significant obstacles for knowledge sharing to take place were high power distance and high uncertainty avoidance.

The collectiveness of Indonesian culture causes a negative effect when collectivism creates the intention to keep harmony within groups. Collectivism positively influences motivations to share knowledge, but not the approach to share knowledge. Participants in this study tried to avoid conflicts. That was the reason participants in formal meetings felt reluctant to criticise or express their ideas as it might embarrass or upset other members. They tended to “save each other’s face” to keep the relationship among them in harmony. Therefore, after a formal meeting they had further discussions personally outside the meeting. Certain information was not shared formally if the information was considered to be ‘sensitive information’ for example about their staffs’ evaluations. The belief was if they discussed one member of the staff’s problems in public, it might hurt or humiliate that staff member. Therefore, Top Managers discussed these issues informally in private. This finding was parallel to a study conducted by Ardichvili et al. (2006) on cultural influences on knowledge sharing. Ardichvili et al. (2006) clarify that in Asian cultures (Indonesia is part of Asia), there is a value to save one’s face even in online sharing. This saving face value might inhibit the sharing of knowledge. Ardichvili et al.’s study also assumed the influence of cultural collectivism. The strong influence of collectivism aligns with a study conducted by Thongprasert and Cross (2008) on knowledge sharing in virtual environments. They argued that collectivism is one of the influential factors that affects the knowledge sharing process.

This study reveals that in a formal meeting, mostly, knowledge transfer takes place. As mentioned earlier, culture inhibits knowledge sharing in a formal meeting. But it does not mean there is no transfer of knowledge at all. The findings in this current study indicated that knowledge transfer happened in discussions especially formal discussions. This study strengthens a study conducted by Aalbers et al. (2006) on transferring knowledge on formal and informal networks. Their study shows that the transfer of knowledge happens more in a formal network than in an informal network. The participants in this study revealed that in meetings they were ‘forced’ to listen when speakers shared their knowledge, especially if the speakers

were 'seniors' in order to show respect. This study demonstrates the participants believe that knowledge transfer is happening as the recipients receive the knowledge. The indicator was that recipients were 'quiet' and 'looked serious' when listening to the speakers.

"Because they asked me to (share knowledge)" motivation (discussed earlier) indicates the important part leadership plays in knowledge sharing at State Polytechnics in Indonesia. 'They' here refers to seniors/leaders during both formal and informal meetings. It is important for leaders, managers, or seniors to ask the juniors or subordinates to share knowledge if knowledge exchange becomes the objective of the sharing. If not, internalisation happens and knowledge transfer takes place. Previous research on knowledge sharing through informal communication by Azudin et al. (2009) who argued it would be impossible for knowledge management to happen without the support or encouragement from leaders in the organisation provides evidence that supports the important part leadership plays in knowledge sharing.

It can be seen how culture influences the relationship between individual (High Power Distance Index) and organisational knowledge, who controls the knowledge (leaders), builds the context for social interaction (formal approach), and shapes the processes involved in how new knowledge was created and shared (socialisation). This study also revealed how culture influenced how leaders were perceived to be knowledgeable or the source of information, how the members interacted more comfortably in an informal discussion, how knowledge in an organisation was created mostly through socialisation, and how their concept of knowledge was something which could expand when it was shared. Poul et al. (2016) and Chang and Lin (2015) conducted a study on the influence of culture on knowledge sharing in general. The result of Poul et al.'s study suggests that cultural attributes are important in knowledge sharing in an organization. Chang and Lin's (2015) study shows there are cultural characteristics which give negative and positive effects on knowledge sharing.

9.5.3. The Participants' Perception on an Effective Approach to Share Knowledge

The participants agreed that an informal meeting was more effective despite the importance of a formal meeting. This perception is influenced by culture. The participants in this study, suggested that most knowledge sharing processes were conducted informally as the result of collectivism of Indonesian culture. The

collective nature of the Indonesian National culture, local cultures, and the concept of *silaturahmi* in Islam encouraged them to gather every time they met each other and naturally discussion took place. Hosftede (2009) explained that Indonesians tend to work together. The local culture in each research site facilitated the collectivism of participants. Banjar, Kongkow, and Arisan were names of informal local cultures' gatherings. Even though these meetings were planned participants argued that they were informal in nature. They felt that there was not a seniors/juniors feeling while they were in these gatherings.

McSweeney (2002), Hlepas (2012) and Sadzali (2011) claim that as there is a diversity of ethnics in Indonesia the national culture is heterogeneous as local cultures create a national culture. The reason was, that in an informal meeting (discussion), the atmosphere was relaxed and this relaxed condition encouraged the participants to share their ideas. The data gathered in this study was in accordance with a study conducted by Burn and Thongprasert (2005). Their study demonstrated that collectivism was a facilitator for knowledge sharing among students, not for the instructors. The students like to learn in group. The instructors, however, argue that collectivist culture inhibit individual learning they expect to see. The participants in this study, especially those who did not hold Top Management positions, preferred to share knowledge in an informal meeting as the informal approach smoothed their intention to share knowledge. Ipe (2003) said that most knowledge sharing used the informal approach.

Culture also influences the preferred methods to share knowledge. The views of participants in this study also illustrated that the participants agreed face-to-face interaction was more effective for sharing knowledge than sharing knowledge using information technology (IT) such as through email or sharing data via USB storage. This paralleled with what Cumming (2003) said about face-to-face interaction versus IT interaction for sharing knowledge where face-to-face meetings are more effective than exchanging documents through IT. Andriessen (2006) clarified that people were much more willing to share their ideas with others through face-to-face interaction than to share them on a database. Lewis (2007) also mentioned that face-to-face interaction when sharing knowledge was better accepted than sharing through email in Asia. The data in this study demonstrated that through face-to-face sharing, discussion happened and the senders would receive faster feedback from recipients. Moreover, the senders (especially the participants who held high structural positions), would view the body language of the recipients, which was important for the senders in order to find out if the recipients understood the

knowledge shared. This was similar to Whitfield's (2016) research that reported Indonesian managers (leaders) needed to meet face-to-face when they talked to subordinates to avoid misunderstanding. The recipients in the present study admitted that they shared knowledge more in face-to-face interactions.

Culture influenced the preference to use face-to-face for knowledge sharing especially when it was related to the Indonesia High Power Distance Index. Face-to-face knowledge sharing actually worked both ways according to Whitfield (2016). High ranked personnel expected respect from the lower ranks and the lower ranks respected the higher ranked personnel. Participants in this study stated that the seniors 'expected respect.' For example, one manager preferred a hardcopy meeting invitation instead of an email invitation. Furthermore, if the meeting was to be conducted outside the institution (provinces), the meeting would also be in a formal situation.

Even though the data also demonstrated that some participants frequently used IT to share knowledge, the participants at the three research sites preferred face-to-face interaction for their method of communication. The choice of approach depends on types of knowledge shared. The data, however, revealed that the young participants and the participants from RS3 (assumed to be more advanced and modern as argued by one of the participants) used IT more often for sharing knowledge. This was influenced by culture, not so much by age, because the seniors at RS3 also actively used email for sharing information. This paralleled research findings by Talmud and Mesch (2016) that cultural differences amongst groups was one of the factors which influenced the differences in individual choices of communication methods (face to face or using IT as the communication channel) and their purposes. It was not about age. The more advanced and modern institutions were more familiar with the use of IT because their organisation had embraced IT as an organisational tool.

9.5.4. How Knowledge is Created in the Organisation

Culture and formalisation clearly influence type of knowledge shared and how knowledge is created in the organisation which is mainly through Socialisation. Even though the data also demonstrated that some participants frequently used IT to share knowledge, the participants at the three research sites preferred face-to-face interaction for their method of communication as described previously. This parallels studies by Whitfield (2016) and Mead and Andrew (2009) who suggest that face-to-face interaction is better when dealing with Indonesians (Asians) as this

method of communication is considered to be polite and effective. Indonesian culture clearly influences this preference. This preferred choice of communication method in turn influences the types of knowledge shared and how knowledge is created.

The results of this research showed that the type of knowledge shared by participants was mainly tacit knowledge. Studies conducted by O'Toole (2011), Korth (2007), and Laframboise et al. (2007) show that tacit knowledge is hard to share. O'Toole argues that tacit knowledge is the 'stickiest' knowledge as it is not easily shared. The evidence from this study differs. Even though the participants shared information through email, they still needed to meet and discuss the data sent. Moreover, as they often meet and also tried to meet each other for *silaturahmi* face-to-face, they communicated directly and shared tacit knowledge. As a result, knowledge was created mainly through Socialisation and Internalisation (Management Team). This trend correlated with the participants' perceived preference (informal approach) for sharing knowledge. The participants shared more tacit knowledge than explicit knowledge and this was also closely related to the eastern approach on Knowledge Management as discussed by Leidner et al. (2006). They argued that the Eastern application on Knowledge Management was the Practice Approach where the knowledge shared is mostly tacit knowledge and the organisation tended to use a practice approach (face-to-face communication or interaction) Therefore, the sharing was more likely to be in informal social groups such as through storytelling.

9.6. The influence of Organisational Factors: The Influence of Culture on Knowledge Sharing in Organisations

There are four main organisational factors which influence knowledge sharing, namely culture, organisational goals and strategies, specialisation, and formalisation. The data from the present research suggested that organisational factors influenced motivation, what knowledge is shared, and the approach used to share knowledge.

This study concludes that culture is the strongest influence on knowledge sharing as it influences organisations and can influence knowledge sharing in an organisation both positively and negatively. Studies conducted by Zin and Egbu (2011) and Razmerita (2016) support this finding. Their studies reveal that culture can support and discourage knowledge sharing. The findings in this study reveal that culture positively effects motivation. Even though the participants motivated

by 'obligation' to share knowledge were influenced by culture (and organisational goals and strategies), nonetheless, they were motivated to share knowledge. Meanwhile, the negative effect of culture on the approach or mechanism to share knowledge discouraged knowledge sharing especially in formal meetings. Other studies on the influence of culture in knowledge sharing such as studies conducted by Hung et al. (2011), Islam et al. (2011), Jackson (2011), Al-Alawi et al. (2007), Leidner et al. (2006), and Ipe (2003) tend to be vague about which dimension of knowledge sharing (nature of knowledge (what knowledge is shared), motivation, approach to share knowledge) which is influenced positively or negatively by culture. Meanwhile, the data from this study did not describe the influence of organisational factors on health as one of the participants' motivations.

Chapter Summary

The findings of this research show that knowledge sharing and knowledge transfer occurred at State Polytechnics in Indonesia as the result of integrated relationship between motivation, what knowledge is shared, and the approach to share knowledge. The finding is different from Ipe's (2003) study. According to Ipe the condition for knowledge sharing to take place is the inter-dependent relationship between motivation, nature of knowledge, and the approach to share knowledge. This study found that knowledge sharing happens mostly in an informal discussion. In a formal meeting even though with an inter-dependent relationship of motivation, what knowledge is shared and the approach to share knowledge, however knowledge sharing might not happen; but knowledge transfer occurred. In order for knowledge sharing (knowledge exchange) to take place in a formal meeting, leaders' or managers' stimuli was crucial.

The findings above mentioned and illustrated that motivation did not assure that knowledge sharing naturally happened. Some prior studies indicated the importance of motivation for knowledge sharing to occur. This study showed that motivation was only well functioned at the initiation stage. Motivation was critical, but not the key for knowledge sharing to take place in a formal discussion.

This study, however, also revealed the influential relationship between motivation to share knowledge, what knowledge is shared, the nature of knowledge, how the knowledge is created, and the approach used to share knowledge. So not only the integrated relationship between motivation, what knowledge is shared, and approach to share knowledge. For example, motivation to share knowledge influenced what knowledge is shared and the approach used to

share knowledge. Meanwhile the approach used to share knowledge and the types of knowledge that are shared influenced how knowledge is created. Knowledge sharing at State Polytechnics in Indonesia operated using a practice approach, where the knowledge shared was mostly tacit. The participants mainly preferred to use informal opportunities, and created certain (scheduled) informal events (such as *pakraman* and *arisan*). These provided opportunities for fresh ideas and responsiveness to changing environments (for example, when they shared knowledge with the community).

There were several factors (organisational factors) that influenced the motivation to share knowledge revealed in this study such as: culture, structural position, religion, specialisation, and organisational goals and strategies. Organisational goals and strategies seemed to be the dominant factor. As the result, this study demonstrated the forced knowledge sharing which occurred. For example, the fact that the lecturers at State Polytechnics in Indonesia had *Tridharma* as their obligation, the participants must share knowledge otherwise there would be sanction (as mention by Government Decree) as well as moral sanction.

The main motivation displayed in this study was reciprocity (to get something in return) which delivered other motivations to share knowledge such as the power, resulting from knowledge sharing, obligation, responsibility and religion. Reciprocity in this study was about giving knowledge (shared knowledge) and receiving the return, which can be knowledge and other things such as a help and support from the recipients of the knowledge. Moreover, the return was also depicted as God's help and reward. Therefore, the reciprocity might be direct or indirect.

The inconsistency of the definitions of intrinsic and extrinsic motivations themselves, was identified as a self-reinforcing cycle as they trigger each other, and further expectations found in this study resulted in the difficulty to determine if the participants' motivations are intrinsic or extrinsic. A motivation was assumed as intrinsic in prior studies, but for other previous studies, the motivation was admitted as an extrinsic motivation. Furthermore, the findings suggested that intrinsic motivations generated extrinsic motivations and vice versa. This relationship created the self-reinforcing cycle relationship. Another important finding demonstrated in this study was further expectation. Motivation was not the only reason for sharing knowledge. Participants expected something else. For example, when they shared knowledge because they were obliged to fulfill their *Tridharma*, they also expected by fulfilling their *Tridharma* points, they would

upgrade their rank. Therefore, it was not simple to decide whether a motivation was intrinsic or extrinsic.

What knowledge was shared at State Polytechnics in Indonesia mostly depended on the motivations and revolved around their obligation as lecturers in Indonesia as stated in the job descriptions of participants in this study. If motivated by obligation, the knowledge shared was related to their obligation as lecturers. The belief in God's rewards for those who shared knowledge was both the motivation itself and also the influence on the motivation to share knowledge. Religious values such as the importance of sharing knowledge, emerged as the reason for participants not to hoard the knowledge they had. What knowledge was shared by participants was influenced by similar organisational factors which influenced the motivations to share knowledge mentioned earlier. As what knowledge was shared, was influenced by organisational goals and strategies, specialisation, structural position, culture, and religion, therefore, the knowledge shared was around the application of *Tridharma* (influenced by obligations as lecturers), policies and regulations (influenced by structural position), expertise (influenced by specialisation), current affairs, and religious matters.

This study illustrated that the approach used, how the knowledge was shared, the types of knowledge shared, and what methods were used to share the knowledge (e.g. either through face-to-face interaction, or through the use of IT) depended on what knowledge was shared. Eventually, the knowledge shared impacted on how knowledge was created in the organisations through the sharing by individuals. The approach deployed to share knowledge was influenced by culture, religion, and organisational goals and strategy.

Organisational goals and strategies caused the tendency of using formal approach to share knowledge (even though normally it was followed by informal approach) while culture and religion influenced the informal approach and face-to-face method as a preferred approach. Participants preferred to use an informal approach (informal discussion) to share knowledge and the face-to-face interaction method of sharing knowledge. As a result of this approach and method, the knowledge shared was mostly tacit knowledge. This study proved that even though according to prior studies, tacit knowledge was difficult to share, this study demonstrated a different finding. Culture influenced how knowledge was created across the three research sites. For example, especially collective culture and *silaturahmi* (informal gathering influenced by Islamic values), participants in the study preferred to share knowledge through face-to-face interaction. In *silaturahmi*,

the meeting was informal. As a result of the preference of using face-to-face interaction, the knowledge created at State Polytechnics in Indonesia was mainly through socialisation.

Even though the preferred approach was an informal approach, the formalisation of informal meetings could not be ignored. Any idea revealed during an informal meeting, was formulated in written format and discussed in a formal meeting. The ideas or decisions which were decided in an informal discussion were not acted upon until formally sanctioned. This was part of the importance of formalisation in a bureaucratic organisation. In a formal meeting, however, if the leaders or the manager (seniors) in that meeting did not ask others to share, they would not share the knowledge. As a result, knowledge sharing did not occur, nonetheless, knowledge transfer did. The speakers at the formal meeting shared their information or knowledge. The participants, especially the lower rank meeting participants, would only be the recipients of the information or knowledge. This findings showed the importance of leaders' (participants referred them as seniors) encouragement or stimuli so that knowledge sharing (the exchange of knowledge) took place.

This study found that culture is the strongest influence in knowledge sharing. The characteristics of Indonesian culture such as collectivism, High Power Index and uncertainty avoidance, gave positive influence on motivations to share knowledge as they encouraged the initiation of knowledge sharing. These characteristics, conversely, contributed negatively on the formal approach to share knowledge. This study also illustrates that the masculinity side of Indonesian culture does not affect knowledge sharing at State Polytechnics in Indonesia.

The following chapter is the final chapter of this thesis which concludes this study and provides recommendation for practitioners and further research.

CHAPTER TEN : CONCLUSIONS AND RECOMMENDATIONS

10.1. Introduction

This study sought to explore knowledge sharing at State Polytechnics in Indonesia. This study investigated What knowledge is shared at State Polytechnics in Indonesia and what are the participants motivations are to share knowledge. The findings contribute to understandings of the inter-dependent relationship between motivation to share knowledge, what knowledge is shared, and the formal and informal approaches to share knowledge. The preceding chapter presented the discussion and interpretation of the findings related to the major research questions. The discussion on motivations to share knowledge includes the intrinsic and extrinsic types of motivation while the discussion on what knowledge is shared included the approaches used to share knowledge, which led to the methods used, types of knowledge shared, and how knowledge is created in organisations. The findings of this present study are unique in that the research sites represent three major subcultures in Indonesia, provide insight into the distinctiveness of knowledge sharing at State Polytechnics in Indonesia and contribute to the understanding on knowledge sharing from an eastern perspective. This Conclusion and Recommendation chapter is organised into five segments: Introduction, conclusion, implications for managers (Directors, Middle Managers, and seniors), limitations and delimitations of the study, as well as recommendations for further research.

10.2. Conclusion

The findings of this study revealed that both knowledge exchange and knowledge transfer take place at RS1, RS2, and RS3 because the participants were motivated to share knowledge, they had knowledge to share, and they had opportunities to share knowledge. The relationship of motivation, what knowledge is shared, and the approach to share knowledge was integrated where, what knowledge was shared mainly depended on motivations to share and the approach deployed was normally influenced by what knowledge was shared.

Organisational factors influenced the motivation to share differently in relation to, what knowledge was shared, and approaches to share knowledge. Organisational goals and strategies, specialisation, and structural position strongly

influenced the motivation to share knowledge and what knowledge was shared. The participants shared knowledge as they were obliged to apply *Tridharma*. Otherwise they would be sanctioned. If shared, for example, sharing a research method, there would be reward. The reward might be points that they could use to upgrade their rank, or financial reward. Here, something was expected as the result of doing the sharing (reciprocity). For lecturers who also held certain positions (management team), they shared policies and regulations. This was part of their responsibilities as managers. The influence of organisational goals and strategy as well as structural position, led to knowledge sharing as a forced sharing. The participants shared knowledge because there was a reciprocal result, either good points or sanction. To avoid sanction, the participants must share their knowledge. Meanwhile, specialisation influenced the fact that participants shared knowledge based on their background knowledge and shared the knowledge with colleagues who had similar knowledge. For example, the participants from Civil Engineering Department shared knowledge related to drainage with colleagues who had civil engineering background knowledge.

This study exemplified reciprocity, mentioned above, as the root of most motivations and one of the contributors for the inconsistency of intrinsic and extrinsic motivations found in this study. The inconsistency of the definition of intrinsic and extrinsic motivation, the further expectation, and self-reinforcing cycle as the result of reciprocity contributed to difficulty in deciding whether a motivation was intrinsic or extrinsic. For example, a participant shared knowledge so that the knowledge was expanded. This intrinsic motivation, however, turned into an extrinsic motivation because the participant then said by having more knowledge, his position would be higher and people would respect him more.

This study also demonstrated the influence of religion and culture on motivation, as to what knowledge was shared and the approach taken to share knowledge. Motivated by religion, Muslim participants shared knowledge because it was a recommended thing to do in order to get reward from God one day. It was part of doing a good deed. Moreover, in Islam, those who were knowledgeable had higher positions than others who were less knowledgeable. This reciprocity was indirect because the reward would be to earn (be rewarded) at some time during life, or alternately when one died. Religion also influenced what knowledge was shared. Many participants shared knowledge related to the values in their religion. Again, this was part of their good deed.

Meanwhile, culture was the strongest influence on knowledge sharing especially national culture. Aspects of culture produced different influences on motivation and the approach to sharing knowledge. Culture positively influenced motivations to share knowledge while producing negative effects on the approach or opportunity to exchange the knowledge. Motivated by culture, participants shared knowledge because it was in their culture. Culture influenced participants to share knowledge to get power. The value in *Tri Hita Karana* (Hindu culture) indicated the need to share knowledge to others to keep the balance in life. If they shared knowledge, they would achieve balance and happiness. Culture also designated the need to share the value in the culture itself, such as, to share your culture from one place to people in different places. It was obvious that culture was one of the important motivations in knowledge sharing. The characteristic of Indonesia culture, such as collectivism, initiated the sharing of knowledge. It opened the opportunity to share knowledge. As they often gathered, informal discussion frequently took place.

Culture can be both as an initiator or inhibitor in knowledge sharing. Culture positively influenced motivation to share knowledge as mentioned above, this study also indicated culture negatively influenced the approach to share knowledge. The influence of formalisation in bureaucratic organisations created the importance of formalisation in the approach to share knowledge. Formalisation evidently contributed positively on knowledge sharing, as formalisation created from the influence of organisational goals and strategies and structural position 'forced' the participants to share knowledge. Many informal meetings were followed by formal meetings. Informal meetings, however, also happened after a formal meeting as the result of cultural influence. Culture, for example, ordained that in order not to damage the reputation of another, participants in this research tended to give feedback to speakers (ones who shared knowledge) outside the formal meeting. This study revealed what happened in a formal meeting: the managers/leaders/seniors shared their knowledge. Meanwhile, the subordinates became listeners in order to respect the seniors and did not want to insult seniors. As the result of cultural influence and without leaders' stimuli, knowledge transfer took place in a formal meeting.

The approach in sharing knowledge played a crucial role in order for knowledge exchange to take place. Motivations to share knowledge were considered as the main initiator in sharing. However, the findings in this present research revealed the approach taken to share knowledge was a determinant factor

for knowledge exchange to take place. The approach decided whether a sharing turned into a knowledge transfer or a knowledge sharing in a formal discussion.

This study revealed that in the settings explored, most knowledge was created through socialisation. This was also influenced by culture which preferred face-to-face interaction methods. Even though today's communication is moving toward the use of IT, face-to-face interaction was proven to be more beneficial for tacit knowledge sharing. Previous studies indicated the difficulty to share this tacit knowledge, however, this study demonstrated that most knowledge shared was tacit knowledge.

Subcultures also played a significant role to facilitate the participants to share knowledge. Participants in this study often gathered in *Pakraman*, *kongkow*, and *arisan*, which were forms of gathering influenced by local culture in each research site. Javanese subculture seemed to influence the participants in the three research sites. There were some values and norms in Javanese culture which subtly influenced most of participants in this study.

The conclusion illustrates the theoretical contribution to the existing knowledge sharing theories. First, the existing theory of knowledge sharing mentions that knowledge sharing happens when there is motivation to share, opportunity to share, and knowledge to be shared, which are in an integrated relationship. This study reveals the integrated relationship amongst these three factors, however, it is more complex. The dependency reveals motivation influences what knowledge is shared and that what knowledge is shared influences the approach used to share knowledge.

Second, the existing studies describe the influence of organisational factors on knowledge sharing. The influence is described as general. Nevertheless, this study demonstrates that the influence of organisational factors or dimensions is more specific. For example, organisational goals and strategies, specialisation, and structural position influence the motivation to share knowledge and which knowledge is shared, but not the opportunity to share knowledge. Culture influences both motivation and approach to share knowledge. The existing studies show that culture gives positive and negative effects on knowledge sharing. This study is able to show that culture gives positive influence on motivation to share knowledge and may contribute negative influences on the opportunity to share knowledge. Third, this study has proven that forced knowledge sharing contributes positively on motivation to share knowledge through formalisation. This study, however, is able to show that formalisation in forced knowledge sharing,

ultimately, could lead to an informal way of sharing knowledge, which is believed to be a better approach. Fourth, various previous studies indicate that what knowledge is shared influences whether knowledge exchange or knowledge transfer takes place. If sharing data, knowledge transfer takes place. This study, found similar results but this study could also describe that a formal result without a leader stimuli, leads to knowledge transfer.

Fifth, as the result of the explanation above, the approach of sharing knowledge decides whether knowledge transfer or knowledge sharing (exchange) happens, not motivation as previous studies found. Similar to other existing studies, this study indicates that motivation is the most crucial factor in knowledge sharing. Nonetheless, the motivation plays a crucial role in initiating the knowledge sharing, but it does not determine precisely whether it is knowledge transfer or knowledge exchange that happens. The approach does. Sixth, brain health (to avoid dementia) is a strong motivation to share knowledge. Previous studies do not include the importance of knowledge sharing for our health, especially our brain, as it can delay dementia. Seventh, this study confirms the influence of religion on motivation to share knowledge. Eight, related to motivation to share knowledge, this study concludes that people are more motivated to share knowledge when there is an individual benefit that they they can receive by sharing knowledge. Most of the previous studies describe the importance of knowledge sharing for the organisations' benefit.

10.3. Implications for Managers

Based on the findings of this study the implications to assist managers to ensure knowledge sharing takes place are allied to what knowledge is shared, motivations to share knowledge, and the approaches used to share knowledge. The knowledge shared was mainly related to participants' obligation as lecturers, responsibility as managers, their expertise, religion, and current affairs. This study suggests that managers could expand the knowledge shared. For example, as regards expertise, managers could actually create an opportunity where there is knowledge sharing between departments. Managers could implement this by encouraging subordinates to conduct inter-department research.

In order to share knowledge, first, managers must focus on both intrinsic and extrinsic motivations. It clearly emerged from this study that both types of motivations are important to initiate knowledge sharing. Managers should not be worried if their subordinates are motivated by an extrinsic motivation as the

motivation can trigger intrinsic motivation as the result of self-reinforcing cycle and further expectation. Therefore, providing financial reward might be a good idea to generate knowledge sharing. Second, as illustrated in the findings 'forced' knowledge sharing was advantageous, managers need to utilise the 'forced' knowledge sharing. Always reminding subordinates about their obligation related to the application of Tridharma. Managers must distribute any information related to opportunities to conduct research or submitting teaching material and the sanction if subordinates ignore the obligation. Therefore, the lecturers will collaborate with other lecturers to design teaching material. Leaders must understand the positive side of collectivism of Indonesia culture. Indonesians are interested in working in groups. It will build their confidence. Individual activities such as designing personal teaching material or individual research should be minimised. Again, providing financial reward might help subordinates to complete the collaborated programs.

The findings in this study also illustrate that knowledge sharing practices can be optimized through the approach used. Sharing knowledge can be forced through formalisation. Therefore, managers should design an official regular formal meeting such as an Academic Forum (a formal forum to facilitate the sharing of researches conducted by lecturers) so that subordinates are forced to attend forums regularly. Formal meetings should not only be conducted at the beginning and at the end of semester, but more regularly, perhaps every other month.

Second, as found in this study, leaders can influence or change the culture in a formal meeting. Therefore, leaders should use the influence of Indonesian cultural characteristics, such as high Power Distance Index (high PDI) and collectivism. As the result of high PDI, subordinates will listen to the leaders' advice. Thus, leaders should encourage subordinates to share knowledge because subordinates will feel compelled to do so. Leaders need to create a knowledge transfer when the number of participants are large, there is an important issue that needs to be addressed, and when time is limited. Based on the findings in this study, it is recommended that leaders should be open for an informal discussion after a formal meeting, where subordinates have the opportunity to ask or give feedback contentedly on the topics which were discussed in the formal meeting.

Third, based on the findings of this study which show the importance of an informal approach and most knowledge was created through socialisation, this study proposes for leaders to facilitate informal opportunities. Leaders should increase the opportunity because this study showed that during an informal

discussion, the participants share enormous amounts of knowledge. Leaders need, for example, to encourage the conversation during lunch hour by providing coffee or tea in a special corner in each department. The members in the organisation will visit the corner and conversation takes place. This informal conversation will strengthen the relationships and build trust between the members in institutions. As a result when they meet in a formal meeting, they will be more relaxed when sharing knowledge. Based on the findings of this study which show the benefits of using *pakraman*, *kongkow*, and *arisan*, leaders are recommended to deploy these local-culture gatherings as regular organised informal meeting opportunities.

10.4. Limitations and Delimitations

Limited literature on knowledge sharing in High Educational Institutions in Indonesia, especially in State Polytechnics in Indonesia was a limitation of this study. Moreover, research on knowledge sharing conducted by scholars from universities in Indonesia mostly used industries as their research sites. Even though knowledge management is gaining its popularity in Asia, many participants revealed their unfamiliarity of the term 'Knowledge Management'. To alleviate this limitation the researcher provided them with a written article on knowledge management which was sent before the interviews occurred.

Another limitation is the qualitative methods used in this study. With the qualitative methods used in this study, the data depended on the participants' responses to interview questions. The researcher, however, ensured that participants felt free in the interview by maintaining the participants' confidentiality.

Categories of the participants and research sites were seen as both a limitation and delimitation in this study. With 28 participants, this study only considered how knowledge sharing took place at State Polytechnics in Indonesia from lecturers' points of view. This study did not revealed how knowledge was shared at State Polytechnics in Indonesia from administrators', technicians', and students' points of view. This study, however, was designed to collect deep and rich data on how knowledge is shared at State Polytechnics in Indonesia.

Research sites were delimited to three State Polytechnics on three islands in Indonesia. It indicated that there were three subcultures. This study considered culture (subcultures) as one of the important influencers. Even though Indonesia consists of numerous subcultures, this research only included three of the major

subcultures. Therefore, this study is replicable for research sites with quite similar subcultures.

10.5. Recommendations for Further Research

The limitations and the findings of this study require further research. Although knowledge sharing in Indonesia has existed in different ways, few studies have examined its impact on Higher Educational Institutions such as polytechnics and universities. This study has provided a number of preliminary findings related to knowledge sharing in three polytechnics in Indonesia. Therefore, there are several recommendations for further research. First, researchers in Indonesia must realise the urgency of conducting research related to Knowledge Management. Industries and Educational Institutions in Indonesia must realise the importance of knowledge management, especially knowledge sharing for their organisational performance. Second, further research which considers the measures to enable richer findings, for example, on motivation, should be conducted to quantify which motivation acts as the most significant motivation to share knowledge.

Third, a larger sample is required in order to allow a more sophisticated description on how knowledge is shared at State Polytechnics in Indonesia. Furthermore, a larger qualitative study involving a greater number of participants might be conducted to follow up this study and confirm its findings. Fourth, further research should involve more research sites in order to identify the influence of subcultures in knowledge sharing. Moreover, as the findings in this study demonstrate the indication of Javanese influence on the other two subcultures, further research should investigate this influence. Fifth, in order to obtain a broader picture of how knowledge sharing takes place at State Polytechnics in Indonesia, a similar study should be conducted with not only lecturers as the participants, but also include administrators', technicians', and students' points of view. Sixth, further research is expected to encompass universities or non-State Polytechnics in Indonesia to deliver a broader understanding on how knowledge is shared in High Educational Institutions in Indonesia. This will also facilitate a comparison of knowledge sharing processes between state run Higher Educational Institutions and privately run Higher Educational Institutions.

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Appendices

Appendix A

THE EFFECT OF HIGH PDI, UNCERTAINTY AVOIDANCE, COLLECTIVISM, AND HIGH SCORE OF MASCULINITY

This section explains the effect of High Power Distance Index, high Uncertainty Avoidance, Collectivism, and the Masculinity of Indonesian culture on Indonesian life.

High Power Distance Index (PDI)

The influence of both the Islamic and Javanese cultures has created cultural practices such as respect for older people, respect for religious men as leaders, respect for the high power possessed by a leader, and the paternalistic relationship that instils a supervisor as a 'father'. These are some of the cultural aspects that result in Indonesia's national culture having a high PDI. For example, if someone has a high position in an organisation, they gain a high level of power as well (Whitfield, 2016). Therefore, According to Whitfield, relationships within an organisation or company in Indonesia are not equal in status, but based on one's position in an organisation which, in turn, plays a significant role in decision making. Indonesia's superiors are authoritative and do not follow orders except those given by their superiors. They also make decisions with which their subordinates do not (cannot) argue, and this system extends to the villages, ethnic groups, and the nation (Whitfield, 2016).

Earlier, Yusrialis (2015) said that Javanese culture influenced the hierarchy in Indonesia. He also states that this hierarchy causes subordinates to be introverted in order to fit in or be part of the group with appropriate behaviours. Meanwhile, relationships with leaders is covered with shyness and reluctance. Father-subordinate relationships strongly take place within the organisation where the subordinates are not permitted to be higher or even to be equal with leaders. This leaders-subordinates relationship is strongly linked to the relationship between aristocrats (*punggawa*) and commoners (*wong cilik*) in the kingdoms era in Java. It can be seen that even though Indonesia is in the Reform Era now, it only influences the participation for citizens. In Leaders-subordinates relationships, the hierarchical relationship still exists. Endraswara (2013) agrees that this *punggawa* and *wong cilik* relationship is not (yet) replaceable in Indonesian organisations. According to

research conducted by Adhtiya (2015), Javanese culture has the ability to survive and shows its originality. He continues by saying that there are no two individuals who are of the same level in Javanese culture. Hierarchical relationships within individuals' relationships lead to the inequality of relationship in Javanese culture. The influence of religion is also strong in Indonesia as daily life is strictly tied to religion and local customs (Gott, 2007).

Superiors normally expect respect and obedience from subordinates in the workplace as, in return, the responsibility of the former is to look after the latter and this makes employment in Indonesia paternal in nature. It also creates '*Bapak*' a leader which literally means father (who guides the children (subordinates) and also means someone who holds a superior position in an organisation (Whitfield, 2016). The leaders who are assumed as *Bapak* may also be influenced by PDI. Saleh and Munif (2015) in their study on building political culture and Edraswara (2013) in his study on Javanese leadership philosophy argue that the father figure is significant in Indonesia's organisations. Saleh and Munif's study shows that Indonesian people consider status, such as structural positions in an organisation more important than wealth. Indonesians respect more people with high status or position than money as a result of cultural influence. Therefore, it is important to maintain a reputation.

As a father, a leader is expected to be knowledgeable as being knowledgeable would make a leader trusted by subordinates in relation to the leader's ideas. According to Pramono (2013) in his study on the leaders' role in recognising problems and their solutions leaders (managers) must guide the subordinates so that they will achieve the organisation's objective. Therefore, leaders are expected to be knowledgeable as they need to guide the subordinates as shown in studies conducted by Irawati (2004) and Suhardjono (2003). Irawati's study on effective leaders mentions that leaders must be knowledgeable in order to be the credible and integrated while Suhardjono's article emphasises the importance of the IQ aspect for leaders. French and Raven (1959) call this 'expert power' as the subordinates believe the leaders know things and trust them. Mintzberg (1989) is an important management expert whose theories on management been well used. He established criteria for a good leader and states that one role of a leader (managers) is to be the source of information. This is one of the reasons a leader must have educational expertise. Even though the leaders are (expected) knowledgeable and the source of information, however, it does not mean that the knowledge or information flows smoothly from leaders to subordinates. Burn and Thongprasert (2005) in their study on virtual education delivery using a culture-based model

approach demonstrate that High Power Distance and High Uncertainty Avoidance are obstacles for sharing knowledge.

Indonesia is mostly patrilineal (Gott, 2007). Thus, leaders or supervisors in Indonesia must give paternalistic protection. The concept of *asal bapak senang* is embedded in Indonesian culture and creates the situation where employees feel hesitant to talk about their problems with their superior and to express ideas that differ from their superior's ideas to avoid confrontation (Whitfield, 2016). Avoiding confrontation especially in public is also extremely important to avoid 'losing face' (being publicly made a fool of). Therefore, people only occasionally speak their mind or disagree openly (Guile, 2002). Avoiding confrontation also influenced democratisation in Indonesia's Reform Era as the result of the High PDI as well. Saleh and Munif (2015) argue that even though the Reform Era opened an opportunity for citizens to participate in politics, however, it did not happen so much within leadership in Indonesia. Leader-subordinate relationships are still relatively influenced by structural position.

It is not only supervisors or bosses who are assumed to be the leaders. Religious persons are also leaders who have to be respected and take on the role model of fathers. According to Lewis (2007), older people are expected to talk more in Indonesia. Older people are not necessarily those who are 'older' than the listeners, but also the leaders/bosses. Therefore, in a discussion or meeting, supervisors or religious people normally talk more. The respect toward older people also influences the way or the medium that Indonesians use to talk. Gott (2002) explains that it is important to show respect to other people especially to elders.

Collectivism

A high score for the collectivism dimension can be achieved by cultures placing harmony as the goal of an interaction or relationship. As Indonesian culture emphasises the need for harmony, even in the workplace, harmony must be built (Whitfield, 2016). Gott (2007) states an important characteristic in Indonesian daily life is harmony and day-to-day consensus. Gott goes on to say that in Indonesia, loyalty and cooperation with family is highly valued and this value is extended to community. If there is a difference that may create conflict, Indonesian culture will attempt to reach a consensus. Whitfield (2016) says that dealing with difficulties will be solved behind closed doors to avoid losing face because, as mentioned, it is important to save one's face and not to bring shame upon the group. Ardichvili, Maurer, Wentling and Stuedemann (2006) conduct a study related to the influence

of culture in knowledge sharing. Similar to Whitfield (2016), Ardichvili et al. also explain the importance of save one's face in Asian culture. The importance of the group is why that Indonesians rarely do things alone. They like company and this is supported by the large Indonesian population which gives Indonesians little sense of personal space or privacy. Lewis (2007) summarises the characteristics of Indonesians which include: the encouragement of harmony and unity; the avoidance of confrontation; the gravity of loss of face; the consideration of politeness and not causing offence in conversation (communication); the hierarchical organisation of society based on age and seniority; and the preference for collectivism.

According to Thongprasert and Cross (2008) and Burn and Thongprasert (2005), collectivism is a facilitator for sharing knowledge so that collectivism is admitted as one of the important factors in knowledge sharing in order to reach an optimum result of sharing knowledge. Collectivism under the influence of the religious concepts of *silaturahmi* in Islam contributes strongly to knowledge sharing. Yudarwati (2011) in her study on corporate social responsibility and public relations which involved three mining companies and a study on *pengajian* to maintain *silaturahmi* conducted by Syam (2003) describe the importance of the *silaturahmi* concept. Syam explains that *silaturahmi* needs to be maintained as it is a place to communicate with each other. *Silaturahmi* is also a tool for sharing love and kindness by visiting each other, collaborating, and helping each other. Collectivism is also described in Hinduism's *Tri Hita Karana*. Amaliah (2016) in her study explains the importance of togetherness in *Tri Hita Karana* which is reflected in helping each other and collaborating based on love and respect. Rosilawati and Ahmad (2015) in a study on the influence of local wisdom *Tri Hita Karana* on Corporate Social Responsibility (CSR) argue that the value in *Tri Hita Karana* emphasises the need to have good relationships with others by having regular meetings, communicating and helping each other based on love. The research conducted by Rosilawati and Ahmad also reveals that sharing ideas takes place during the interaction influenced by *Tri Hita Karana*.

In Indonesia, respect and harmony can also be achieved by no open display of anger, as its manifestation is a highly offensive behaviour (Whitfield, 2016). Therefore, Indonesians may not tell the truth, if it may hurt someone, especially older people. Lewis (2007) notes that Indonesians are essentially talkative, but when they do talk, they usually do so in a quiet and emotionless voice. This behaviour is aimed at avoiding offence. According to Lewis's model of cultural types for virtual

relationships, Indonesia's culture is categorised as a reactive one where trust is based on protecting the other's face, politeness, sacrifice, and reciprocal attention.

In relation to the importance of respect and harmony in a discussion, it can be seen in the way Indonesians solve their problems in a discussion which is called *musyawarah untuk mufakat* (consultation for consensus). *Musyawarah* and *mufakat* do not belong to Indonesian culture solely. *Musyawarah* and *mufakat* are part of South East Asian culture and Indonesia is one of the countries in South East Asia (Acharya & Layug, 2016; Tamaki, 2006). Acharya and Layug (2016) and Tamaki (2006) call this an 'ASEAN way' which underlines the need for collective identity. Acharya and Layug (2016) in their study on ASEAN identity on developing Asia-Pacific regional order explains that this ASEAN way is based on informality, consultation (*musyawarah*), and consensus (*mufakat*). Tamaki (2006) conducted a study on how to understand the concept of the ASEAN way (*musyawarah* and *mufakat*) using a constructivist approach. Tamaki admits that the 'ASEAN way' concept is vague and only based on consensus without any objections. He claims that the 'ASEAN way', is as a diplomatic norm, and seems to show the members of an organisation's reluctance to get involved in frontal argumentation with government and the age-old memories of colonialism in South East Asia. As such, the 'ASEAN way' is a collective habit among South East Asia people (Tamaki, 2006). Kawamura (2011) in his study on consensus and democracy in Indonesia through *musyawarah untuk mufakat* illustrate the sharing of information (in a meeting) is aimed at consensus. The consensus is not merely achieved through the meeting itself, but also through *lobbying* outside the meeting. Similar to the study conducted by Kawamura (2011), a study conducted by Hanafi (2013) on *musyawarah* and democracy in Indonesia also reflects the reality that *musyawarah* is conducted in order to get support or agreement on new programs.

Uncertainty Avoidance

Due to the fear of making mistakes that may hurt or disappoint someone, many Indonesians tend to act based on rules so that mistakes are not made and shame is not caused. The details of procedure or rules are required so that any step made is assumed to be correct. Indonesians are afraid of being different, creative, or of stepping outside of procedure as it may be 'wrong' according to supervisors. For example, Indonesians may invest time in building relationships, considering ideas, and preparing to act, before making a decision and this is really time consuming. It happens because they are afraid of making a wrong decision (Whitfield, 2016).

Masculinity

In Indonesia men have a higher position than women as it is described in Hofstede's study in cultural dimensions (Hofstede, 2009). Religious values in Islam (as the majority religious belief in Indonesia) and law in Indonesia do not contribute to perceived gender inequality. A joint research publication by the Directorate General of Human Rights (DG-HAM) of the Indonesian Ministry of Law and Human Rights (MOLAHR) and Equitas – International Centre for Human Rights Education describes that Islam as the most influential religion in Indonesia, does not discriminate against women and that women and men are seen as equal (DGHAM, MOLAHR, & Equitas, 2009). The political position of women and men in Indonesia is also similar as they both have civil rights and the right to vote (Lewis, 2007). The main source of gender inequality in Indonesia is due to the patriarchal system, which creates women's duties in Indonesia as being only in *dapur, sumur, kasur* (kitchen, wheel, and bed) while culturally understood (community's expectation) that it is a man's duty to protect women. This stereotype regarding the dominating of men over women was socialised through educational processes (Hidayat, 2011).

Appendix B

LOCAL CULTURES

The local cultures describe in this chapter are Javanese, Balinese, and Malay cultures.

Javanese Culture

Encouraged by Javanese culture, Indonesian employees have group responsibility, not individual responsibility. Therefore, they do not say anything that may make group members lose face (Whitfield, 2016). Gauthama (2003) says that the Javanese must always do self-reflection so that whatever they do, will not bring shame for themselves or their family. Shame, either to oneself or other people, is something that must be avoided.

In Javanese philosophy, it is important to be accepted by the community or *njawani* (well behaved) and not being *ndurung njawani* (not well behaved) (Idrus, 2012). Idrus (2004) explains the Javanese values which taught children to be *njawani*: patient, honest, noble, self-controlling, concerned, harmonious, respectful, obedient, generous, avoid conflict, solidarity, empathy, polite, willing, amenable, dedicated, and self-aware. Due to the values of harmony, avoiding conflict, and showing respect, Javanese people use discussion as the main way to solve problems. Guile (2002) adds that self-control is very important in Javanese culture such as staying nonchalant, calm, and polite in order to gain respect. Idrus (2012) argues that the value of sharing is taught to the young even though they have very little or *sithikidhing* (a little but equal). This *sithikidhing* philosophy builds tolerance, sympathy, empathy and avoids greed. Another important value in Javanese culture according to Idrus (2012) is shyness or hesitancy. This value in the end creates inferiority in individuals as this philosophy teaches feeling less powerful than others. Geertz (1983) in 'Javanese Family' concludes that there are three concepts which have to be developed: fear, shyness, hesitancy. There are points that might influence the culture on Java Island regarding development in Indonesia. Gahara (2012) mentions that most development in Indonesia, such as infrastructure, especially during *Orde Baru* (New Order) was focused on Java Island. As a result, Tijaja and Faisal (2014) explain that Java is more developed and is economically stronger than other areas outside Java Island.

Figure B.1. has been removed due to copyright restrictions.

Figure B.1: Map of Java

Javanese culture influences the province where one of the research sites in this research is located. This province has three subcultures: the subcultures that live in the Kawi mountain slopes; a subculture of Madura in the Arjuna slopes; and the subculture from the Majapahit Tengger culture in the Mount Bromo-Semeru slopes. The people in the city are religious, dynamic, hard-working, and straightforward. The language they use is the *Timuran* Java dialect of Javanese and the language of Madura is the commonplace language of the people in this location. The language style does not represent the soft-Javanese language. It shows the attitude of a people who are firm, straightforward and practical.

Balinese Culture

The Balinese people live on Bali Island, Lombok, and in the western part of Sumbawa Island (Gott, 2007). The province one of the research sites is located is also influenced by Bali culture. Balinese cultures are influenced by the Hindu religion which is the main religion on Bali Island. The daily activities of the Balinese are influenced by the rules of Hinduism. For example, they have more holidays compared to other employees in Indonesia, as they have more religious events. For the Balinese, life revolves around family and the village. Everyone has a duty to conduct themselves well in the community and this is attached to traditional rules and customs. Every village has *bale Banjar* (*Banjar*) for meetings and village activities (Guile, 2002). Yet, the influence of religion not only affects the observable life in Bali it affects their invisible cultures, the cultures that influence their behaviour and how they see their interactions. As Gott (2007) notes, Hinduism is the

religion and the culture of Balinese people who believe that their island belonged to Gods (Horton, 2004).

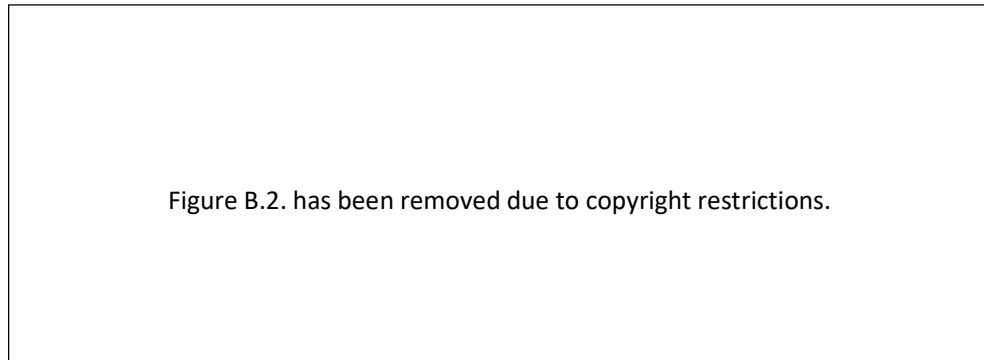


Figure B.2: Map of provinces influenced by Balinese culture

Balinese people nowadays are said to be more modern. Balinese people used to be famous for being patient and hard working. They worked in any field but mainly in agriculture. They felt embarrassed if they did not do any work. However, since the economic focus on tourism, they have left informal jobs such as street vendors, handymen, or food seller. These informal jobs were taken over by immigrants from outside the island (Suda, 2016).

Saputra (2012) explains that Balinese people are divided into four castes. The highest caste is *Brahmana* and the lowest caste is *Sudra*. Most Balinese people are in the *Sudra* level. People from lower ranks must respect people from higher ranks and they even have to talk using polite language. This caste system creates superiority within the community. Castes also decide to whom someone can marry. The caste system itself was taken from Hinduism, however, during colonialism, castes were used to divide the community so that the community became weak and disunited.

The province, where RS1 is, has a long association with Hinduism whose origins derive from the Singhasari Kingdom. Figure B.3 shows how the infiltration of Hindu in the province was brought by the Singhasari Kingdom as the province was occupied by Singhasari through the Pabali expedition.

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Figure B.3: Conquered area of the Singhasari Kingdom

Figure B.4. shows the area in Indonesia which is and was influenced by the Hindu-Buddha kingdoms in the past. However, since the infiltration of Islamic influences into Indonesia, the influence of Hindu-Buddha has declined. Only in some areas such as Bali, parts of East Java (around Bromo mountain) (Trisakti, 2011), and Mataram can the strong influences of Hinduism still be seen (Umam, 2014; Yudarta, 2011).

Figure B.4. has been removed due to copyright restrictions.

Figure B.4: Areas in Indonesia influenced by Hindu-Buddha Kingdom in the past.

Custom and culture in the province at RS1 is very closely related to the religious life of that community. Hinduism dominates the daily life of people in this province and it is centred around the philosophy of *Tri Hita Karana* which is derived from Hindu and includes philosophy, moral values, and ceremony. This philosophy of life for the Balinese people has a concept that preserves the diversity of culture and environment in the midst of globalization. *Tri Hita Karana* means 'Three causes for the creation of happiness'. It emphasises three integrated human relationships in this life which include relationships with each other, with the environment and the relationship to God. Every relationship follows the rule of life to appreciate surrounding aspects equally. The implementation of this concept must be balanced and aligned between one and another. *Tri Hita Karana's* fundamental essences imply the welfare of the three causes are rooted in the harmonious relationship between Man and God, Man and the natural world, and a Man toward other humans. For the relationships with other people, this concept defines that humans cannot live alone as assistance and cooperation with others are needed and people should be pleasant and harmonious toward each other. Human relations should be regulated on the basis of mutual respect, love and guidance. The relationships between the families at home and other communities should also be in harmony (Pudjiharjo & Nama, 2012; Sudira, 2011; Sukarsa, 2008). Hinduism in the province at RS1 was influenced by the development of Hinduism in Java.

The pattern of social life of Hindus in the province, where RS1 is located, is tied to aspects of life that require the need for worship or prayer in a particular temple. They also require the need to live together in one place in the community. Universal harmony and tolerance are some of the teachings of Hinduism. Another important value is non-violence. The views expressed in the Hindu religion hold a doctrine of non-violence (*ahimsa*) to all forms of life as a prerequisite for the existence of the universe (Mambal, 2016).

Malay Culture

In Indonesia, Malay cultures cover the area of the east part of Sumatera, Riau islands, and Kalimantan Barat (Ahyat, 2012). Indonesia shares Kalimantan with Malaysia and the Sultanate of Brunei (Horton, 2004). Malay is the name that refers to a group whose language is the Malay language. The Malays settled in most of Malaysia, Sumatra's east coast, around the coast of Borneo, southern Thailand, and the small islands that lie along Malacca and Karimata. In Indonesia, the number of ethnic Malays equates to about 15% of the population, most of whom inhabit the

province of North Sumatra, Riau, Riau Islands, Jambi, South Sumatra, Bangka Belitung and West Kalimantan. Many of the Minangkabau society, Mandailing, and Dayak identify as Malays and are moving to the east coast of Sumatra and the west coast of Borneo. In addition to the Archipelago, the Malays are also found in Sri Lanka, Cocos Islands, and South Africa (Priambodo, 2013; Ahyat, 2012). However, according to Ita (2012), Malay can refer to any ethnic community in Indonesia if they are Muslims, such as the Dayak People in Kalimantan Barat. If they are Muslims, they refer to themselves as Malays.

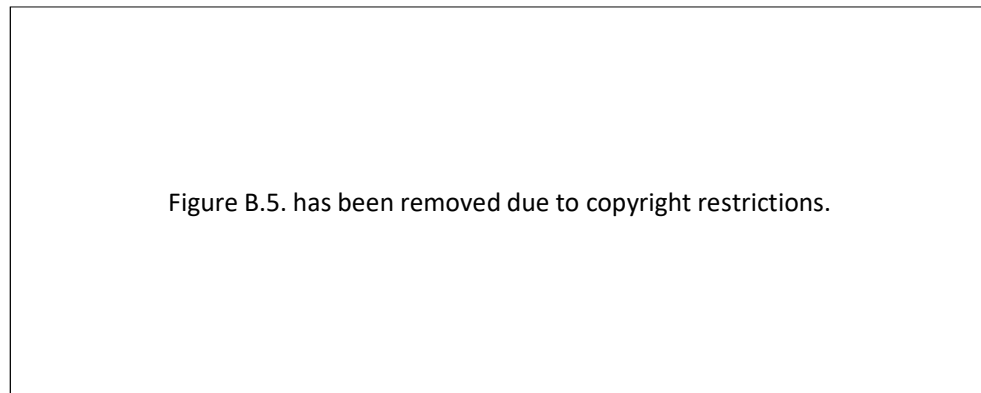


Figure B.5: Light green areas indicate Malay inhabitants.

West Kalimantan's Malay culture is depicted in the various customs and traditions such as *Saprahan*. *Saprahan* implies: 1. Mutual Value. The ceremony presents the mutual cooperation, coordination, and the sense of togetherness; 2. Obedience. *Saprahan* reflects the encouragement to carry out its hereditary tradition. It is a sense of respect, a leader who is considered as a highly respected elder and a manifestation obedient to Allah. A sense of attachment automatically creates a sense of unity and oneness among the people; 3. Religious Values. It is seen that Allah provides the dish that is inseparable from the prayer and covered with a reading *shalawat* to the prophet; 4. Unity. It is about unity and oneness that can ultimately foster community identity. It can be seen that the culture of Malays in West Kalimantan is influenced by Islam (Hendry, 2013; Pemerintah Kecamatan Pontianak Tenggara, 2014; Priambodo, 2013)

As with other cultures in Indonesia, west Kalimantan's culture is also influenced by the national culture. Therefore, the culture embraces *musyawarah*, *Bapak*, the importance of harmony, respect for older people, not causing embarrassment for someone, and so on, as related earlier. However, Malays tend to be more open and honest (than Javanese). If telling the truth may insult or humiliate

others, instead of lying Malays tend to use *menyindir* and *Pantun* (like Rhyme). These are ways of speaking in a softer way which is expressed in conjunction with morality and religion (Man, 2013). This is also a form of communication in order to avoid insult to other people (Sulissusiawan, 2015). For example, in Indonesia, it is a must to serve guests something, even if it is just a glass of water. There is no need to ask if the guests need a drink or not. They just serve the drink, usually tea or coffee. In West Kalimantan where it is always hot, iced-tea is the favourite. Should the host forget to serve something, guests may politely ask. However, as some guests may be a bit reluctant to ask directly, what they might do is to use expressions such as: "Wow, today is very hot. I am sweating a lot", "I feel like in Sahara", or if the guests have a close relationship with the hosts, they may use humour and the guests might say: "*Bunga Melati di telaga, sampai hati bikin aku dahaga*" (a jasmine in a lake, how could you let me be thirsty). It is very common and normally the hosts (if they are Malays) would immediately serve a drink. Most ethnics in the Province where RS2 located are Malays and most of people in this province are Muslims (Badan Pusat Statistic, 2010).

How Islam was brought to West Kalimantan is described below.

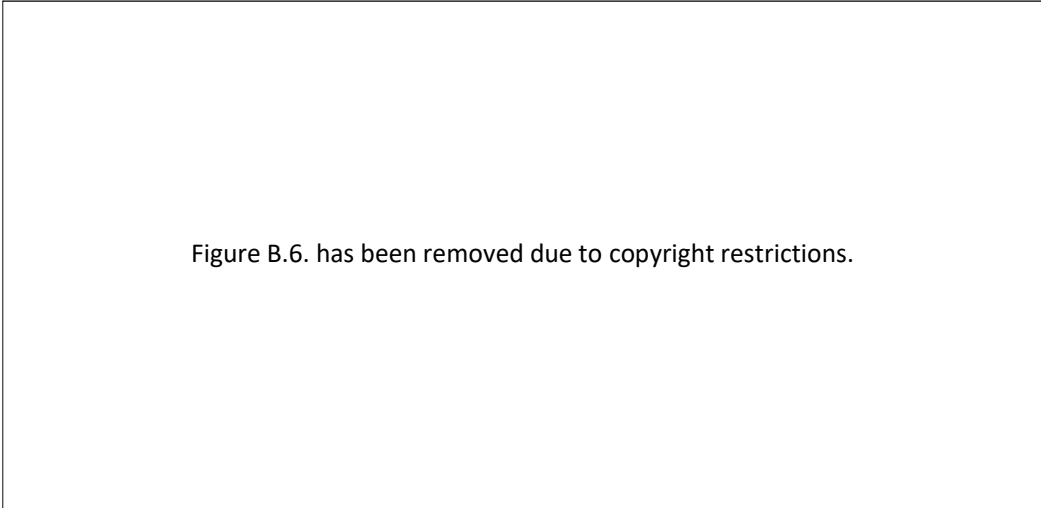


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Figure B.6.: illustrates how Islam was brought to West Kalimantan by the Sriwijaya Kingdom in Sumatera.

Appendix C



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LETTER OF INTRODUCTION

Dear Sir/Madam

This letter is to introduce Nurul Fitriani who is a PhD student in the School of Education at Flinders University. She will produce her student card, which carries a photograph, as proof of identity.

She is undertaking research leading to the production of a thesis or other publications on the subject of Knowledge Sharing at State Polytechnics in Indonesia.

I would be most grateful if you would volunteer to assist in this project, by granting an interview and provision of supplementary documentation which covers certain aspects of this topic. No more than one and half an hour on each interview occasion would be required and one and half an hour for provision of supplementary documentation for each research site.

Be assured that any information provided will be treated in the strictest confidence and even though there is no assurance of participants anonymity, the participants will be individually codified in the transcript, resulting thesis, report or other publications and reasonable steps will be taken to assure the participants' anonymity. You are, of course, entirely free to discontinue your participation at any time or to decline to answer particular questions.

Since she intends to make a tape recording of the interview, she will seek your consent, on the attached form, to record the interview, to use the recording or a transcription in preparing the thesis, report or other publications, on condition that your name is codified, and to make the recording available to other researchers on the same conditions (or that the recording will not be made available to any other person). It may be necessary to make the transcript available to secretarial assistants for translation (from English back to Indonesia), in which case you may be assured that such persons will be advised of the requirement that your name or identity not be revealed and that the confidentiality of the material is respected and maintained.

Any enquiries you may have concerning this project should be directed to me at the address given above or by telephone on +61882013379 or e-mail Carolyn.Palmer@flinders.edu.au

Thank you for your attention and assistance.

Yours sincerely

Associate Professor Carolyn Palmer PhD
School of Education
Faculty Education, Humanity, and Law

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee. For more information regarding ethical approval of the project the Secretary of the Committee can be contacted by telephone on 8201 5962, by fax on 8201 2035 or by email human.researchethics@flinders.edu.au

Updated 28 September 2007

achievement

Appendix D



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Kepada Yth,

SURAT PENGANTAR

Dengan Hormat,

Melalui surat ini saya memperkenalkan Nurul Fitriani, mahasiswa PhD di School of Education Universitas Flinders. Dia akan menunjukkan kartu mahasiswa yang berisi foto sebagai bukti identitas diri.

Saat ini Nurul sedang mengadakan penelitian yang pada akhirnya bertujuan untuk menghasilkan tesis atau publikasi dengan topik Knowledge Sharing di Politeknik Negeri di Indonesia (Knowledge Sharing at State Polytechnics in Indonesia).

Saya akan sangat berterima kasih apabila anda secara sukarela bersedia membantu penelitian tersebut dengan bersedia terlibat dalam interview dan penyediaan dokumentasi tambahan yang berhubungan dengan topik tersebut. Tiap interview tidak akan lebih dari satu setengah jam dan penyediaan dokumentasi tambahan sekitar satu setengah jam untuk tiap peserta.

Segala informasi diupayakan akan terjaga kerahasiaannya dan walaupun tidak ada jaminan seratus persen terhadap identitas peserta, namun langkah-langkah terbaik akan diusahakan agar peserta interview tidak teridentifikasi di script interview, thesis, laporan, atau di segala bentuk publikasi lainnya. Anda dapat menghentikan partisipasi atau menolak untuk menjawab pertanyaan saat interview.

Karena interview akan direkam, dia memerlukan persetujuan anda (consent) dalam bentuk tertulis di form yang telah disediakan (consent form), untuk merekam interview, menggunakan rekaman tersebut atau transkripnya dalam mempersiapkan thesis, laporan, atau publikasi lainnya dengan catatan bahwa nama atau identitas anda disamarkan, dan untuk menunjukkan/memperdengarkan rekaman tersebut kepada dosen pembimbing dengan identitas anda tetap akan ditutupi. Seorang penterjemah akan menterjemahkan transkrip dari bahasa Inggris kembali ke bahasa Indonesia dimana penterjemah tersebut tidak akan mengetahui identitas anda dan akan menandatangani surat perjanjian untuk menjaga kerahasiaan data.

Apabila ada pertanyaan sehubungan dengan penelitian ini silahkan menghubungi saya di no telp: +61882013379 atau email: Carolyn.Palmer@flinders.edu.au

Terima kasih atas perhatian dan bantuan anda.

ABN 65 524 596 200 CRICOS Provider No. 00114A

inspiring
achievement

Hormat saya,

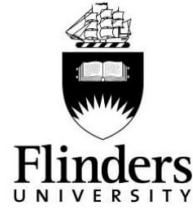
Associate Professor Carolyn Palmer PhD
School of Education
Faculty Education, Humanity, and Law

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee. For more information regarding ethical approval of the project the Secretary of the Committee can be contacted by telephone on 8201 5962, by fax on 8201 2035 or by email human.researchethics@flinders.edu.au

This document was translated in accurate by Nurul Fitriani

This translation was checked as being accurate by Sutan Berkadia

Appendix E



CONSENT FORM FOR PARTICIPATION IN RESEARCH (by interview and providing documentation)

Knowledge Sharing at State Polytechnics in Indonesia

I, being over the age of 18 years hereby consent to participate as requested in the Letter of Introduction for the research project for the research project on Knowledge Sharing at State Polytechnics in Indonesia.

1. I have read the information provided.
2. Details of procedures and any risks have been explained to my satisfaction.
3. I agree to audio recording of my information and participation.
4. I am aware that I should retain a copy of the Information Sheet and Consent Form for future reference.
5. I understand that:
 - I may not directly benefit from taking part in this research.
 - I am free to withdraw from the project at any time and am free to decline to answer particular questions.
 - While the information gained in this study will be published as explained, I am aware that there will be no guarantee that I will not be identified and that individual information will remain confidential.
 - For one and half an hour interview, I may ask that the recording be stopped at any time, and that I may withdraw at any time from the session or the research without disadvantage.
 - I may select the document that the investigator requires during one and half an hour document provision and will provide further information when needed related to the documentation.
 - The report of this research may be used for publication and there is no assurance that my identity will not be revealed.
6. I agree the transcript being made available to other researchers who are members of this research team in this case, the investigator's research supervisors, on condition that my identity will be codified.

Participant's signature.....Date.....

I certify that I have explained the study to the volunteer and consider that she/he understands what is involved and freely consents to participation.

Researcher's name.....

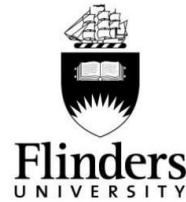
Researcher's signature.....**Date**.....

NB: Two signed copies should be obtained. The copy retained by the researcher may then be used for authorisation of Items 7

7. I, the participant whose signature appears below, have read a transcript of my participation and agree to its use by the researcher as explained.

Participant's signature.....**Date**.....

Appendix F



CONSENT FORM (LEMBAR PERSETUJUAN) UNTUK KEIKUTSERTAAN DALAM PENELITIAN

(untuk interview dan menyediakan dokumen)

Knowledge Sharing at State Polytechnics in Indonesia

Saya, berumur di atas 18 tahun dengan ini memberikan persetujuan (consent) untuk berpartisipasi seperti yang terdapat dalam surat pengantar dalam penelitian yang berjudul Knowledge Sharing at State Polytechnics in Indonesia.

1. Saya telah membaca lembar informasi.
2. Rincian prosedur dan resiko telah dijelaskan secara memuaskan
3. Saya setuju untuk direkam dengan tape recording saat memberikan informasi dan selama keterlibatan dalam penelitian.
4. Saya sadar bahwa saya sebaiknya menyimpan copy dari lembar informasi dan Consent Form.
5. Saya mengerti bahwa:
 - Saya mungkin tidak mendapatkan manfaat secara langsung dengan keterlibatan dalam penelitian ini.
 - Saya bebas untuk menarik diri dari keterlibatan dan bebas untuk tidak menjawab pertanyaan tertentu.
 - Jika informasi informasi dari hasil penelitian ini dipublikasikan, saya menyadari sepenuhnya bahwa tidak ada jaminan seratus persen bahwa identitas saya tidak akan diketahui dan bahwa information akan tetap menjadi rahasia.
 - Dalam satu setengah jam interview, saya bisa meminta peneliti untuk menghentikan rekaman dan bisa menarik diri dari keikutsertaan dalam penelitian tanpa dikenai konsekuensi apapun.
 - Selama satu setengah jam penyediaan dokumen yang berhubungan dengan knowledge sharing, saya akan memberikan/menyediakan dokumen yang diinginkan peneliti yang berhubungan dengan knowledge sharing dan akan memberikan penjelasan jika diperlukan.
 - Laporan hasil penelitian akan dipublikasikan dan tidak ada jaminan identitas saya tetap menjadi rahasia.
6. Saya setuju apabila transcript dibaca oleh peneiti lain yang juga anggota team peneliti untuk penelitian ini, yang dalam hal ini adalah dosen pembimbing peneliti, dengan catatan bahwa identitas saya tetap dirahasiakan.

Tanda tangan peserta.....Tanggal.....

Saya nyatakan bahwa saya telah menjelaskan tentang penelitian ini ke sukarelawan dan merasa bahwa beliau mengerti keterlibatannya dalam penelitian ini dan tanpa tekanan menandatangani lembar persetujuan (consent form).

Nama peneliti: Nurul Fitriani

Tanda tangan peneliti.....Tanggal.....

NB: lembar ini harus ditandatangani dua rangkap. Salah satu rangkap digunakan untuk tanda tangan dibawah ini untuk point no. 7 (saat member checking)

7. Saya, peserta penelitian, yang bertanda tangan di bawah ini, telah membaca transcript interview dan setuju untuk penggunaannya seperti yang telah dijelaskan oleh peneliti.

Tanda tangan peserta.....Tanggal.....

This document was translated in accurate by Nurul Fitriani

This translation was checked as being accurate by Sutan Berkadia

Appendix G



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CRICOS Provider No. 00114A

INFORMATION SHEET

Title: Knowledge Sharing at State Polytechnics in Indonesia

Investigator:

Nurul Fitriani
School of Education
Flinders University
Ph: +61422590447

Description of the study:

This study is part of the project entitled '*Knowledge Sharing at State Polytechnics in Indonesia*'. This project will investigate the Knowledge Sharing practice at three State Polytechnics in Indonesia. This project is supported by Flinders University School of Education.

Purpose of the study:

The purpose of this study is to explore knowledge sharing practice at State Polytechnics in Indonesia:

- To investigate the factors which motivate knowledge sharing
- To find out the approach used
- To investigate the types of knowledge the members share
- To extrapolate the organizational factors which enable and inhibit the knowledge sharing practice

What will I be asked to do?

You are invited to attend a one-on-one interview in Indonesian which will be conducted in your workplace and the investigator will ask you few questions about your views or experiences on knowledge sharing in your organization. The interview will take about one up to one and half an hour. The interview will be recorded using a digital voice recorder to help with looking at the results. Once recorded, the interview will be transcribed (typed-up) and stored as a computer file and then destroyed once the results have been finalised. The next step is for the participants to provide documentation (such as training reports, emails related to the transfer of knowledge, policy and procedure, meeting minutes, reports on research, reports on workshops, power points of workshops, manuals, brochures, memos, and other document shared in relation to sharing the knowledge) and the investigator will ask questions related to the documentation. This

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achievement

process will take up to one and half an hour for each participant. All participants are advised that their participation is voluntary and will be compensated AUD\$15 for their participation.

What benefit will I gain from being involved in this study?

The sharing of your experiences will fill the gap on literature related to knowledge sharing at State Polytechnics in Indonesia. You help to put the basis for future researchers who are interested in investigating knowledge sharing not only in State Polytechnics but also in High Educational Institutions and other organizations in Indonesia. You also broaden the understanding of knowledge sharing practice within your organization. By understanding how actually knowledge sharing takes place in your organization, you have opportunities to improve knowledge sharing practice by maximizing the factors that may need to be improved.

Will I be identifiable by being involved in this study?

Investigator cannot guarantee individual anonymity. However, the investigator will take all reasonable steps to protect your anonymity and confidentiality. The investigator will try to make sure that only the investigator who will be aware of the individual participants. Investigator only needs your name for personal record so it will be easier for the investigator to conduct member checking or if further questions or explanation related to your answer in the interview are needed. You will be codified on the interview record and transcript. The interview files will be in typed-up files stored on a password protected computer that only the investigator (Nurul Fitriani) will have access to. Your comments will not be linked directly to you.

Are there any risks or discomforts if I am involved?

There is no perceived risk to you or the investigator as any potential risks have been anticipated. The possible risk such as coercion has been anticipated by conducting one-on-one interview. Your identity is also protected by codification. Member checking will be carried out to assure participants that the investigator does not make assumption.

How do I agree to participate?

Participation is voluntary. You are free to withdraw from participating in this research without effect or consequences. A consent form accompanies this information sheet. If you agree to participate please read and sign the form and send it back to the investigator at fitr0002@flinders.edu.au

How will I receive feedback?

Outcomes from the project will be summarised and given to you by the investigator if you would like to see them.

Thank you for taking the time to read this information sheet and we hope that you will accept our invitation to be involved.

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee (Project number INSERT PROJECT No. here following approval). For more information regarding ethical approval of the project the Executive Officer of the Committee can be contacted by telephone on 8201 3116, by fax on 8201 2035 or by email human.researchethics@flinders.edu.au

Appendix H



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CRICOS Provider No. 00114A

LEMBAR INFORMASI

Title: Knowledge Sharing at State Polytechnics in Indonesia
(Knowledge Sharing di Politeknik Negeri di Indonesia)

Peneliti

Nurul Fitriani
School of Education
Flinders University
Ph: +61422590447

Gambaran penelitian:

Pengumpulan data ini adalah bagian dari penelitian dengan judul '*Knowledge Sharing at State Polytechnics in Indonesia*'. (Knowledge Sharing di Politeknik Negeri di Indonesia). Penelitian ini meneliti praktek knowledge sharing di tiga Politeknik Negeri di Indonesia. Penelitian ini didukung oleh School of Education Universitas Flinders.

Tujuan Penelitian:

Tujuan dari penelitian ini adalah untuk mengetahui bagaimana praktek Knowledge Sharing di Politeknik Negeri di Indonesia:

- Untuk mengetahui faktor-faktor yang memotivasi knowledge sharing
- Untuk mengetahui pendekatan yang paling sering digunakan
- Untuk mengetahui jenis pengetahuan apa yang di bagi (share) oleh anggota organisasi
- Untuk mengetahui faktor-faktor di organisasi yang mendukung atau mengambat praktek knowledge sharing

Apa yang harus anda lakukan?

Anda diundang untuk menghadiri interview per-orangan yang dilakukan dalam bahasa Indonesia di tempat kerja anda. Peneliti akan menanyakan beberapa pertanyaan tentang pandangan atau pengalaman anda dalam praktek knowledge sharing di organisasi anda. Interview akan berlangsung paling lama satu setengah jam. Interview akan direkam di digital voice recorder untuk memudahkan mendengarkan kembali hasil interview saat pengetikan untuk transcript. Setelah direkam, akan diketik dan disimpan sebagai file komputer. Langkah selanjutnya adalah anda diminta untuk menunjukkan dokumentasi yang berupa laporan pelatihan atau kursus, email yang berhubungan dengan transfer pengetahuan, policy dan prosedur, hasil rapat, laporan hasil penelitian, laporan

inspiring
achievement

workshop, power point workshop, manual, brosur, memo, dan dokumen lain yang di transfer dalam tujuan untuk berbagi pengetahuan. Dan ini memakan waktu sekitar satu setengah jam untuk tiap peserta. Peneliti akan memberikan beberapa pertanyaan yang berhubungan dengan dokumentasi. Partisipasi anda bersifat adalah sukarela dan akan ada kompensasi senilai AUD\$15.

Manfaat apa yang akan saya dapatkan dengan menjadi peserta?

Jawaban atas pertanyaan dalam interview yang berdasarkan pengalaman atau pandangan anda akan mengisi kekurangan literature atau informasi tentang knowledge sharing di politeknik negeri di Indonesia. Anda membantu meletakkan dasar untuk penelitian lebih lanjut yang dilakukan para peneliti lain yang tertarik dengan topik knowledge sharing tidak hanya knowledge sharing Politeknik Negeri tapi juga di Institusi Pendidikan Tinggi dan organisasi lain di Indonesia. Anda juga memperjelas pemahaman anda tentang praktek knowledge sharing di organisasi anda. Dengan memahami lebih dalam praktek knowledge sharing di organisasi anda, and memiliki kesempatan untuk meningkatkan praktek knowledge sharing dengan meningkatkan faktor-faktor pendukung yang dianggap perlu untuk ditingkatkan.

Apakah identitas saya teridentifikasi apabila terlibat?

Peneliti tidak menjamin kerahasiaan identitas peserta seratus persen. Namun peneliti akan melakukan langkah-langkah terbaik untuk melindungi identitas dan kerahasiaan peserta. Peneliti akan berusaha agar hanya peneliti yang mengetahui identitas peserta. Peneliti memerlukan identitas anda sebagai personal record untuk memudahkan saat member checking atau jika peneliti memerlukan informasi lebih lanjut sehubungan dengan jawaban yang anda berikan saat interview. Identitas anda akan ditulis dalam bentuk kode dalam rekaman dan transcript. Interview akan tersimpan dalam file komputer yang dilindungi dengan password sehingga hanya peneliti (Nurul Fitriani) yang memiliki akses ke data.

Apakah ada resiko atau ketidaknyamanan apabila saya terlibat?

Tidak ada resiko yang sekiranya membahayakan peneliti maupun anda (peserta) karena sebelumnya sudah diantisipasi. Hal yang berpotensi menjadi resiko seperti resiko intimidasi diatasi dengan interview per-orangan. Identitas anda juga dilindungi dengan pengkodean unruk tiap peserta interview. Member checking juga akan dilakukan untuk meyakinkan anda bahwa peneliti tidak mereka-reka atau merubah hasil interview anda.

Apa yang harus saya lakukan jika saya ingin terlibat dalam penelitian ini?

Keikutsertaan dalam penelitian ini bersifat sukarela. Anda bisa menarik diri dari keikutsertaan tanpa dikenai resiko apapun. Cornsent form disertakan dalam lembar informasi ini. Jika anda bersedia untuk berpartisipasi, silahkan baca dan tanda tangani lembar tersebut (consent form) dan kirimkan ke : fitr0002@flinders.edu.

Bagaimana saya mendapatkan feedback?

Hasil penelitian akan dirangkum dan apabila anda menginginkannya akan dikirimkan.

Terima kasih telah membaca lembar informasi ini dan kami harap anda bersedia untuk terlibat dalam penelitian ini.

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee (Project number INSERT PROJECT No. here following approval). For more information regarding ethical approval of the project the Executive Officer of the Committee can be contacted by telephone on 8201 3116, by fax on 8201 2035 or by email human.researchethics@flinders.edu.au

This document was translated in accurate by Nurul Fitriani

This translation was checked as being accurate by Sutan Berkadia

Appendix I

PROFILES OF STATE POLYTECHNICS IN INDONESIA: RS1, RS2, AND RS3

Below is the description of Research Site 1, 2, and 3. The illustration is mainly on their organisations' profiles.

Research Site 1

Research Site 1 is a state polytechnic located on twelve hectares in one of the provinces in Indonesia. It is a leading vocational education institution which is equipped with many facilities to support the teaching and learning process. RS1 is influenced by the culture in the province and is influenced by Hinduism.

RS1's vision is to be a leading institution of professionals who have international competitiveness. The development of science and technology is through community services (Tri Dharma University). As a professional education provider providing education based on the needs of industry, RS1 also produces qualified employees with 'market-demand' orientation in tourism-based engineering and commerce. RS1 actively works to establish continual cooperation with educational institutions, government agencies, businesses, professional associations and societies both nationally and internationally. RS1 also aims to develop an efficient, effective, transparent and accountable management for the institution, in accordance with market demands to improve a conducive and sustainable institutional environment. RS1's educational policies are aimed at preparing students to be community members who have professional skills in knowledge expertise, the dissemination of expertise and utilisation of that expertise to improve the welfare of communities and to enrich national culture. Preparing students to be community members can be conducted by improving the quality of human resources and optimising the functions and benefits of various sources through the organisation's activities in cooperation with government and industry.

RS1 has six departments: Civil Engineering, Mechanical Engineering, Electrical Engineering, Accounting, State Administration, and Tourism. There are also three units: research and community service, the job placement centre, and the international office, which support the teaching and learning process and the organisational objectives.

Research Site 2

Research Site 2 is in one of the cities in West Kalimantan with 234 lecturers and instructors and eight departments comprising: Civil Engineering, Mechanical Engineering, Accounting, Business Administration, Agriculture, Fishery, and Electrical Engineering Departments. It has forty classrooms, and each department has its own laboratory and workshop. Internet access is available as is a library, a sports centre and football field.

Its vision is to be the best and the most trusted vocational institution nationally and internationally by 2020. To realise this vision, RS2's missions are: 1. to conduct vocational study and applied research to improve social welfare to support national development; 2. to develop healthy and dynamic professionalism; 3. to develop and utilise science and technology to social welfare using the resources available at Pontianak State Polytechnic optimally.

The objective of Polytechnic education at RS2 is to organise vocational education in various fields of expertise; to provide qualified graduates who have a competitive advantage and whose manner is devoted to God Almighty, are disciplined and with a high work-ethic, knowledge, attitudes and professional skills. Other objectives are: to be self-employed, able to communicate effectively in Indonesian and foreign languages (especially English), as well as master the use of communication media, informatics and computers. To be responsive and adjust easily to change, have awareness of moral values, culture and humanity, and care for the environment. RS2 also has objectives to develop research and improve community service, maintain and develop a healthy climate of academic life, and create mutually beneficial cooperation between institutions, government agencies, industry and other educational institutions, both in Indonesia and abroad. The objective is to improve the institutional performance.

There are six units to support the teaching and learning process. They are a computer and Information Technology Unit, a Language Unit, Research and Community Service Unit, Industrial Relations and Cooperation Unit, Maintenance and Repair Unit, and Library Unit. The organisational chart below indicates that RS2 is an organisation which is moderately hierarchical.

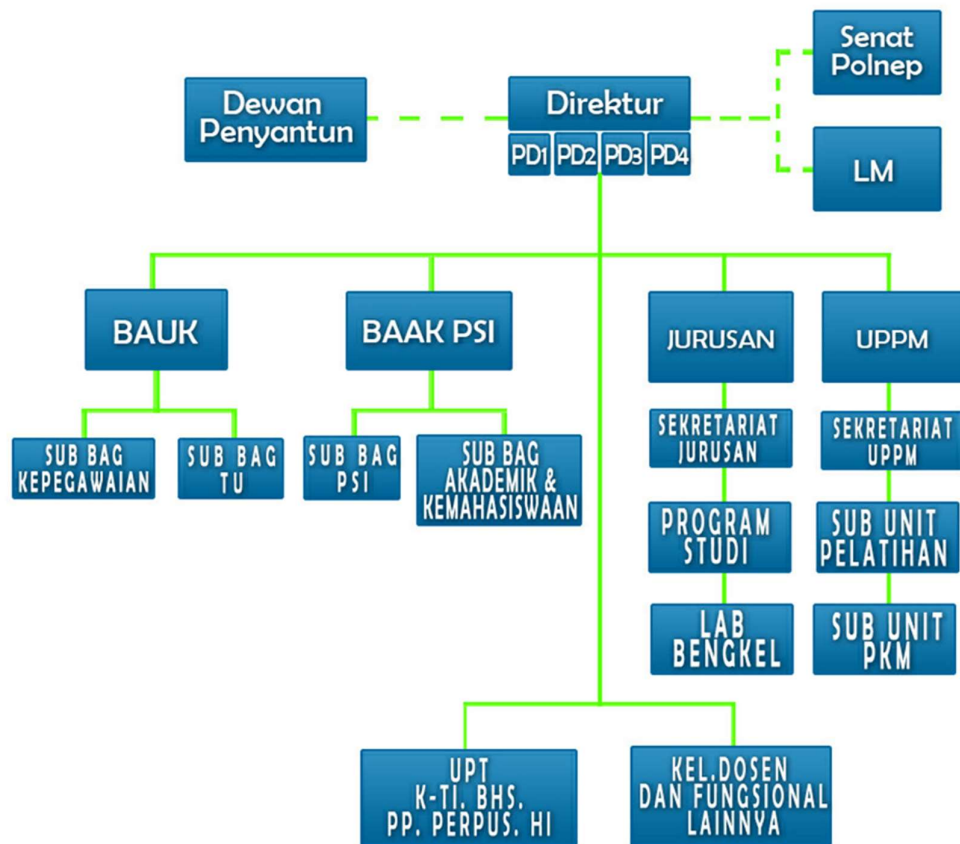


Figure I.1.: The organisational structure of RS2

Research Site 3

Research Site 3 has a vision to be a vocational college that excels in global competition, with the mission: to organise and develop qualified vocational education, innovation, and the development of global competitiveness according to the needs of industry, government agencies, and the public; to conduct applied research and community service that is beneficial to the development of science and technology as well as the welfare of the community; to organise the educational management system based on the principles of good governance; and to create a conducive academic atmosphere to improve the quality of human resources and a learning system that encourages lifelong learning and the growth of entrepreneurial spirit.

The educational system at RS3 focuses on preparing graduates with the skills and competencies required by industry. The educational system at RS3 consists of 40% theory and 60% practice through a competency-based curriculum. Students are given greater emphasis on practice in laboratories and workshops. In addition, the

learning experience at RS3 emphasises the formation of soft skills to build honesty, leadership, discipline, teamwork and smart-work culture. To achieve the hard skills such as academic skills, students also receive important knowledge as a preparation to enter the workforce.

RS3 was named the Diploma Program of Engineering Education University of one of the largest universities in Java by the Decree of the Director General of Higher Education, the Education Minister No. 03/DJ/Kep/1979, established by the Government of Indonesia, through the World Bank funds, with experts from Switzerland. Through Ministry Decree No. Mendikbud. 0313/O/1991 on structuring environments Polytechnic Institute and State University, the RS3 was defined as a Polytechnic, but still qualified as a university with six departments: Civil Engineering, Mechanical Engineering, Electrical Engineering, Chemical Engineering, Accounting, and Business Administration. Furthermore, by virtue of Ministry Decree No. 147/O/2004, the Polytechnic gained the status of independence as RS3.

RS3 continues to improve both the quality of service to students, faculty and staff. The improvement of service quality is pursued in order to achieve the vision of the institution. The units are the: Entrepreneurship Training Unit (ETU), Office of International Affairs (KUI), Public Relations Unit, Maintenance and Repair Unit, Language Unit, General Course Unit, Library Unit, and Printing Unit.

Structure

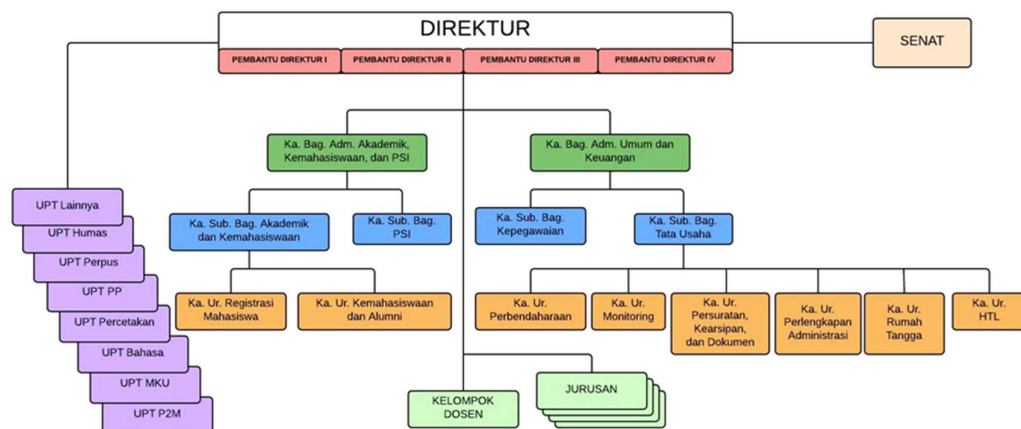


Figure I.2. The organisational structure of RS3

Appendix J

DETAILS OF WHAT KNOWLEDGE IS SHARED

J.1. Research Site 1

J.1.1. Top Managements Participants (Top Managers)

Tridharma: teaching material, conducting research, and dedication to community

Sharing knowledge in *Tridharma* includes the sharing of teaching material, research, and sharing knowledge with the community or dedication to community.

Teaching material

The Director and Director Assistant share knowledge related to teaching, including sharing teaching handouts or teaching modules. This sharing can be through informal discussion such as during lunch breaks or in a formal discussion in the Competency-Based Curriculum group/expertise groups (KBK) where they design teaching materials together, re-construct new material based on information they may get from various sources such as books, journals, articles or training. In the KBK group, they exchanged teaching modules or hardcopy and softcopy handouts with each other. The Director also reported that he shared knowledge by designing new handouts for teaching extracted from his new experience, while doing his duty related to his expertise and documents [which can be books, journals, articles]. As a lecturer, the Director interacts with the community or shares expertise with them. His experience during interaction or training given to the community may relate to a new experience that he can share in his institution or in teaching. The Director explained,

So the sharing of handouts or teaching modules is not only with the lecturers but also to the students. When we have a new experience, we learn the handout, innovate the handout, then it becomes a new hand out...I am the vice president of Hydraulic experts association in Indonesia. We share a lot about hydraulics in there especially applied science. A few days ago we met a delegation from Taiwan. [He means that when he has a new experience, he will use that knowledge to innovate the existing handout so that he can design/produce new handouts]

He went on to say,

In Polytechnic, we have an obligation as lecturers to make teaching modules, handouts for the students. So the sharing of handouts or teaching modules is not only with the lecturers but also to the students. When we have new experience, we learn the handout, innovate the handout, then it becomes a new hand out. I also share documents...There is no procedure of our

togetherness in the group. It just our commitment. Well, when we get new knowledge, we design the new teaching material together...We set a meeting, to decide new material for teaching...use IT sometimes. Sometimes there were friends who could not join the meeting. We use IT. We said, this is a new material, let's discuss it again.

Meanwhile, the First Director's Assistant mentioned, "Related to my teaching process, I share knowledge through discussions with my friends who have similar expertise. So when I make a handout, I share it with them...I share teaching material."

Research

Both the Director and the Director's Assistant shared knowledge about research. The Director shared his expertise (in hydraulics) through informal discussions when friends came to ask him about risk management. They approached him as he was a senior lecturer in the institution and an expert in hydraulics. The Director said,

He [the subordinate] says, I have this idea, Sir. He consults with me in my office, asks me what I think. We share each other's ideas. New ideas for research ... It may be about risk management for water control. He has an idea, we share with each other. He might want to know from me what the variables are...

Meanwhile, the First Director's Assistant shared knowledge in research in a broader context. He shares his ideas on research methodology, ideas for new research, publications, research proposals, or data analysis, and in informal discussions with his friends or staff in *the Lembaga Penelitian dan Pengabdian Pada Masyarakat*/Research and Dedication to Community unit (LP3M).⁴ The First Director Assistant shared his ideas related to research in formal discussions such as seminars as well as sharing ideas informally. He shared documents such as PowerPoint presentations and articles. He shared documents via, and has discussions through, email. He explained,

I usually do sharing on research methodology. With my friends, about the development of research methodology. It can be about finding new ideas for a new research, how to put it together for academic journals, just in informal situation. I do formal discussion as well, but mostly informal discussion. Formally usually in a seminar. If it is in a formal situation, document sharing takes place. We share power point, articles...Most of them about research methods. Many of my friends discuss about designing research proposals, data analysis, and so on. Sometimes I visit LP3M (dedication to the community unit). We discuss about research methods. What I have, what they have, we share to each other...They come to me face-to-face most of the time. Unless they send it through email, then I will read it. Then we discuss it through email a bit...

⁴ LP3M is a unit in RS1 which manages research and publications and also dedication to community.

Dedication to Community (Community Service)

The Director shared expertise with the community. As a member of the Indonesian Industrial Association and consultant for water resource control, besides sharing knowledge related to hydraulics, he also shares his knowledge gained from his experience in association with flood control in his city by considering the environment. He recounted, “We share knowledge regarding hydraulic such as flood control...Besides, I am also a consultant for water resources control ...” Meanwhile, The First Director Assistant at RS1 shared knowledge related to culture (tradition) to the community in Banjar.⁵ Usually through informal discussions.

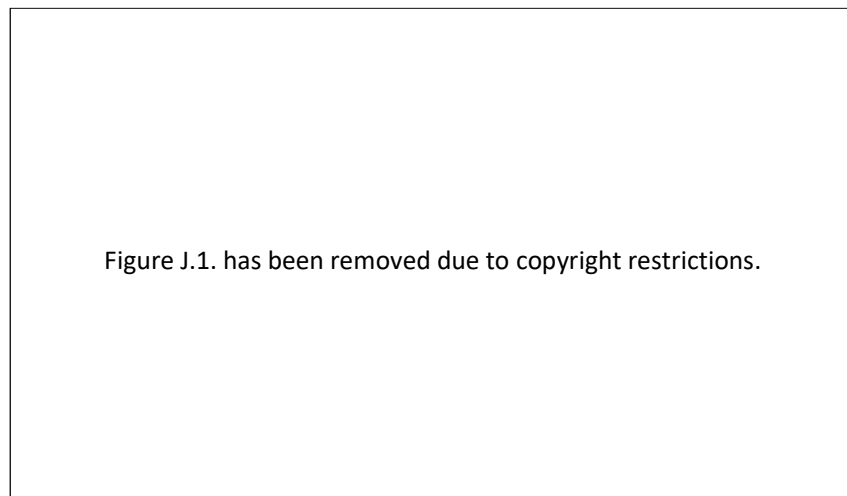


Figure J.1: An example of Bale Banjar as a gathering place for the community.

Source: Gerbang Sadu Mandara, 2014

The Director further explained the culture in his organisation by telling a story to the community. The Director tried to compare the subcultures in their community and did this to exchange understanding of cultures as there might be good habits from other communities that could be absorbed into his organisation. Maybe there were good habits or traditions at the workplace that he could bring to his Banjar that could improve the Banjar’s activity. Moreover, because the institution was in

⁵ Banjar is a traditional community organisation in the province where RS1 is which is bound by religion and belief and whose scope relates just to the community. Every Banjar has its own place to gather which is called Bale Banjar, where community members gather, interact, or discuss matters such as social issues, and run traditional ceremonies. Banjar is very important for people in the province where RS1 is, as it binds them as a family in which trust and respect are built (Noviasi, Waleleng, & Tampi, 2015; Vipriyanti, 2008).

another part of the province, the local culture itself is quite different, as it depends on the area in which it is located. For example, the east, south, and north are not culturally identical as was explained by the Director. The southern community, for example, wants to share the culture in the west. The Director continued,

we share our experience in our workplace to the social organisations. We share the culture actually because the office maybe in other part of Bali. And Bali culture itself a bit different, depends on the area. For example, east Bali, south Bali, north Bali, are not exactly the same. For example we want to share the culture in west Bali, we are in our community in south Bali...We tell the story that in west Bali, this is what is happening...the culture is like this. This is a culture sharing. Then we try to compare it to our own culture. Does it suit to our own culture? Voluntarily, I bring this culture to my office...

The First Director's Assistant brought the practice into his organisation to the community or relates his experiences at work. He stated, "I share knowledge with administrative staff, heads of departments, lecturers, and students. Outside campus, I am one of members in community traditional organisation. We call it Banjar here. So, I share the knowledge about community, social life, in Banjar..."

Professional Development Program: results (key ideas), PDP information and reports

The Director and The First Director's Assistant shared knowledge in the area of Professional Development Programs. It might be the PDP key ideas (results), reports, material, or information.

PDP report

Top Management participants at RS1 shared PDP reports with the institution. According to the Director, submitting PDP reports was an obligation. The report recorded the activities during the program and this was part of the administrative procedure. The Director confirmed,

It is obligated for all of staff after finishing the programs to make reports about the activities. They have to explain about what the activities are, for hmm...administrative report and their responsibility to the knowledge itself. For example, they attend a training, such as construction development training, for four days, when they get back, they must make report. Activity report. about what they were doing for those four days. the rule is for everybody...The report is submitted to the institution, it has something to do with administrative business. But if it is about sharing the knowledge, we use forums.....Still in hard copy, my training report is submitted to finance unit, the treasurer, all reports, because the report related to funding. The activity reports are there, in human resource department.

The First Director's Assistant confirmed they must submit a report after attending a training. He reported, "Then when we come back from the training, we must make a report. Then we can also share it with other friends..."

PDP results (key ideas)

After attending a PDP, like other members, Top Managers at RS1 shared PDP key points or important ideas they had gained from attending the program, with colleagues in their department during the academic forum meeting. The Director stated, "to share knowledge...we use [Academic] Forums after just attended a training." The Director's Assistant shared the training's key ideas informally. If it was related to management, he shared it with his colleagues in the management team. But if it was related to his expertise, he shared it with his colleagues in the accounting department. He stated, "I share my training results."

PDP information

The First Director's Assistant shares information about scholarships and training with the members of the Academic Staff on the mailing list. Each department has their own mailing list. He stated, "We share a lot of information through mailing list such as the information about training, and scholarships."

Organisational strategies, development and institution life (management)

The Director shared his ideas informally in *Pakraman* with other members in the organisation concerning strategies to improve the organisation's performance. The name *Pakraman* comes from *Pakraman Village'* which is a social religious group (usually called "*desa adat'*" or traditional village) in Bali which has the *Tri Hita Karana* or the Balance Concept as its philosophy. RS1 formed a social group within this institution by adopting the idea of *Pakraman*. The Director explained that *Pakraman* is an informal cultural group within RS1,

We have some informal groups, but no evidence for that as it is informal... Because it is informal. We call it 'pekraman' the members of Bali State Polytechnic. It is actually a cultural group in this campus. In 'pekeraman', we share a lot. We talk a lot. And unintentionally, we talk about how to improve this organisation. Sometimes there is new strategy to improve the organization performance...no rules for meeting, just flowing. Spontaneous...The topics discussion are varied. But there are always the topics about organization development or knowledge.

The Head of Academic Affairs as the First Director's Assistant, became involved in formal meetings where he shared his ideas on institutional life, human resource development and strategic planning (RENSTRA), in workshops or small discussions. He stated that he uses PowerPoint presentations to share the institution's Strategic Planning or RENSTRA. The RENSTRA document states what the institution needs to achieve in five years, the strategies, approaches to be undertaken, the vision and mission, and the funding. He explained that, "I share

knowledge about] institution life and human resource development...sharing knowledge in management, or RENSTRA meetings...”

Policies and Regulation

The First Director’s Assistant’s position carries the responsibility to circulate or inform members (lecturers) about policies and regulations related to academic affairs. This information could be from the Director, who would request the First Director’s Assistant to disperse the policies and regulations to other sub-ordinates such as lecturers. The First Director’s Assistant explained that sharing could be via email. He also shared his ideas regarding the policies with the Director because he was his supervisor. The First Director’s Assistant explained that he shared, “with my supervisor, he for example has different expertise. Normally we discuss policy, the implementation of regulations, ministry regulations, president regulations, and so on...” He then added,

Related to my position in this organisation, usually I share policies, regulations, such as credit marks, upgrading levels. To lecturers usually. That is my job description to share those stuff. Manage the academic issues. ... We send document through email sometimes. Usually letters, policies, the academic materials, so most of them is actually the information.

The Director added that he needed to share or discuss the policies from DIKTI so that they all had a similar interpretation. He commented, “we must follow the policies from DIKTI, the central government. But we need to interpret them together so that our activities are in line with DIKTI’s policies and regulations....”

Summary of informal meetings

The First Director’s Assistant explained that after informal meetings he summarised the key points raised in hardcopy form as evidence of the discussion. The First Director’s Assistant said, “Any topic of discussion, related to institution and teaching, we share through face-to-face interaction, then we summarise it in form of hard copy, then we present it in formal meeting. The hard copy is the evidence of the discussion. No rule for this. Naturally happen.”

Current Affairs

Current affairs in this study refers to any topics that might not be related to the participants’ work or expertise such as socio-economic topics, politics, or family concerns. The First Director’s Assistant, for example, did not only shared job-related knowledge or information, but also informal topics as well during break times with his friends in his department (lecturers’ rooms) or institution. The First Director’s

Assistant noted, “we discuss the informal topic then maybe the serious ones. As it is quite intensive, it becomes a discussion.”

J.1.2. Middle Management Participants (Middle Managers)

Tridharma: Teaching material, conducting research, dedication to community

In the area of *Tridharma*, knowledge related to all three dedications, teaching material, research, and dedication to community, was shared.

Teaching material

MM2, MM3, and MM5 shared teaching material with colleagues in their departments or other colleagues who taught similar subjects by giving documents or discussing the material related to teaching. Lecturers who taught similar subjects shared teaching materials. Sharing might also happen when they taught different subjects or changed subjects. In this case, they would share material with the lecturer who replaced them. MM2 said, “I will give the material to that friend.” They usually did the sharing in a KBK formal meeting. MM3 informed, “I usually share teaching material, modules in KBK group.” MM5 added, “we usually share modules...” Besides discussing the teaching material in KBK, MM4 shared training results with her students in classroom teaching through improved teaching handbooks based on the training. She said, “such as by improving teaching handbook.”

Research methods

Middle Management participants at RS1 shared knowledge related to methods of conducting research such as data, theses, reference documents, research results, reviewing colleagues’ research proposals, and any ideas for research in an Academic Forum meeting. An Academic Forum is a forum in every department. In this forum’s meetings, the members in each department shared knowledge mainly related to research. They might share the material or just discuss the topic regarding research. MM2 said that he shared his thesis, research data, and his research proposal at the academic forum. He noted, “I share a thesis, I uploaded the thesis...or in the academic forum here where we share knowledge on applied science for example... Data ...references to them...we can use the forums to share our ideas, or hmm...our research proposal.” They shared research results and ideas for research. MM3 reported, “Related to conducting research ...We share the research proposal that will be submitted. We also share the research result there...share our idea for research, or research proposal.” MM5 noted how he shared knowledge

related to methods in research which was by giving reviews on the research proposal, "I also share things about research. Usually the research is about the material which we teach to our students...I was a reviewer for other colleagues' research. So I gave feedback about their research..." Additionally, through formal discussion, another way of sharing knowledge was by uploading their research and publishing it in university journals as MM2 did. MM2 stated, "...I uploaded my research, that I had invented something new. It was published in Udayana University journal..." Research Site 1 had several journal publications as well. A special table with a journal to put research material into was another way to share knowledge informally in research as done by MM5. He commented, "...if it is journal, we bring it along with me. Before the discussion start, I put it in meeting table, so they can read the journal..."

Knowledge expertise shared with community

Middle Management participants conducted community service by sharing knowledge expertise. The community service could be similar to what MM2 did by designing and giving a product or project, such as a machine construction for a community or MM5 who shared experience through fieldwork. MM2 and MM5 also shared their knowledge and expertise through discussions with the community. The discussion between MM2 and his department colleagues regarding a community project establishment was usually carried out in the laboratory informally. Then, a formal or informal knowledge sharing discussion with the community took place. MM2 designed a machine that could be utilised which was then granted to the community. MM2 mentioned, "we have a chat in laboratories. It is like this, we often establish, hmmm..It is like 'project'...I share about machine construction." MM5 carried out fieldwork in PLN (a local electrical department) where he shared his knowledge and expertise with PLN staff. He shared what he knew and his experience with PLN staff informally. He recounted, "so most of our sharing is related to our job...we share what we know to staff there ...we share experiences as well."

Professional Development Programs: results, reports, material, information

Middle Management participants at RS1 shared knowledge regarding the PDPs. The sharing of PDPs included the results, key points, reports, material, and information.

PDP report

As with other members, MM3 and MM5 submitted PDP reports to the finance department. The report was in hardcopy. MM3 recalled, "I submit the training report..." MM5 recounted, "... I attended the training and after that we make report."

PDP results

After attending the PDP, MM1 shared slides with his department colleagues in a formal meeting. Formal meetings here were departmental meetings which took place two or three times in a semester. However, if there was an urgent issue to be discussed, the Head of Department could always set a formal meeting. The ideas received in training might be used to help other lecturers if they planned to upgrade their teaching material and it would be discussed at department meetings. MM1 added, "...then we discuss the training result..."

PDP material

MM2 shared modules and handouts of PDPs that he had attended to students as part of the teaching and learning process in the classroom and to his colleagues who taught similar subjects. He also discusses the PDP results with his department colleagues during formal meetings. He used the PDP key points to develop his teaching material. He remarked, "After having training, I share the handouts or modules...I also share the modules ...the training results are discussed in those meeting..."

PDP Information

MM3, MM4, MM5 shared documents and information from The Indonesian Directorate General of Higher Education (DIKTI) or from emails sent by other colleagues. The information was related to PDPs. MM3 asserted, "Information about a grant from DIKTI." or just information as MM4 explained,

I...share information about workshop outside campus...last time my colleagues in Singapore shared information about a symposium in Thailand. A friend in France also shares. So I re-share the information...I also share information related to administrative training, filing training and so on. ...about doctoral study, about scholarship, about research...

Meanwhile, MM5 shared information related to PDPs informally. He shared PDP brochures by placing the brochures on an information table in his department.

Expertise

The members of each department have their own expertise. The lecturers from the Accounting Department for example, were experts in accounting. As a lecturer

with accounting expertise, MM1 shared his expert knowledge informally. He also shared knowledge related to his duty as the Head of Department such as that relating to competency examinations, which had to be considered by a head of department. He stated, "I share knowledge related to accounting...." MM3 with a civil engineering background also shared knowledge related to his expertise in informal discussions with his department colleagues. He reported, "with a friend who also has similar expertise, I share the information. We download the foundation material, after that we have a discussion." Meanwhile, MM2 whose expertise was in mechanical engineering chose to share his expertise in soft files with colleagues in his department. This was usually followed by an informal discussion, especially when his colleagues had questions regarding the files. He also shared his expertise when his colleagues often asked for his ideas relating to mechanical engineering. He stated, "I share my expertise knowledge in soft files most of the time. ... I do further discussion.... We just like sharing to colleagues if we know something new about mechanical engineering...." Besides sharing files and having discussions on his expertise, MM2 also shared his machine design with his colleagues in the institution. He noted, "I share design and others. They call me if they have problem."

Dispersal of information

As heads of departments, MM1 and MM2 were expected to pass on information from other colleagues. MM1 usually shared the information during a formal meeting and commented, "...I inform the summary of information we get from other colleagues...or it could be information from our colleagues." MM2 forwarded the information to others informally. He stated, "...then I share it or pass on the information." Meanwhile, MM4 passed on articles she received from her friend, to other colleagues in her department where she was the head. She mentioned, "a colleague sent me a paper (academic paper such as journals) immediately through email, and ask to be passed on to other colleagues."

Information related to management

As Middle Management personnel in RS1, each manager shared knowledge related to management. For example, department development as was described by MM1 and MM5. MM1 recalled, "The information we share normally about department development, the development of institution." MM5 recounted the informal discussion about management was, "...usually about institution

development.” They also shared information about management either formally or informally as was mentioned by MM3,

I share knowledge related my work in department. Well, I think it is knowledge, because it is my knowledge in management. It is about the process how I manage the department. The topic can be about budget. We also discuss the procedures. That is how we share. When we share to management, it is mostly about our condition (in department he leads) ...

Topics about a department were also discussed formally or informally as MM2 clarified,

The topics discussed with management, are normally about the campus. About management, (department) condition, facilities, infrastructure, about my department. But if the information is general, for example about management, how to manage our campus, we can discuss that.

Another topic which was informally discussed was how to manage the department they led as was confirmed by MM4, “In management, I share about how to lead a department.” The sharing could be with their colleagues, the Middle Managers, or their Top Managers and it could be during an informal or formal opportunity.

Information concerning administrative issues

The Middle Management participants shared information related to administrative issues. MM1 shared the printed form of the organisation’s vision and placed it in the lecturers’ rooms. The vision was also shared through the department’s website. The department he led had its own website and is one of the best State Polytechnics’ websites in Indonesia. The idea to upload the vision on their website was to inform the community about their vision. The hardcopy affixed on the wall was meant to inform all of the staff. MM1 said, “The management expect us to distribute the information from many resources. We also print out our vision in big size so that everybody knows it. If it is through internet, maybe not all members know it.” He also publicly shared timetables by uploading teaching and examination schedules so lecturers and students could access the information. He said, “We also upload the teaching schedules, examination schedules in our department website, we also upload information for students.”

As a head of department, MM1 shared meeting highlights. He shared a hardcopy with colleagues in his department. He kept a copy for those who did not attend the meeting, giving and explaining it to them later. MM1 continued saying, “we compile the meeting topics.” Meanwhile, MM3 shared or forwarded information from DIKTI. He reported, “...I share information about a grant from

DIKTI.” As the head of the Tourism Department, MM4 shared information about PKD, teaching timetables (as MM1 did), staff SKP (employees’ targets), Student Credit (SKS), and the academic calendar through email and Facebook. The information was also shared through hardcopy. She stated,

I usually share information. For example, the latest one, I shared information about PKD from DIKTI. I share the information to my colleagues, through Facebook or email. I share teaching timetables, last time I shared the information about SKP for staff and lecturers. She said ‘...related to SKS, through email. Academic calendar, through email.

Feedback after a formal meeting

MM2 tried to “save his colleagues face” during a formal meeting, so if he needed to share his feedback with his colleagues, he sometimes did that after formal meetings, informally. He explained,

I think it is the culture. We are from the East, always try to protect one’s feeling. We prefer to deliver the idea to him outside the meeting. So even though we are in the academic world, free to talk, but we still have to be careful in communication. We are free to express our idea, but if it is related to other people’s feelings, we choose to discuss it later.

Current affairs

MM3 explained that he and his colleagues also discussed topics which might not be work-related. They could be about skills or reclamation issues. They usually did this in an informal talk as part of what they did in their life outside the institution. This social sharing activity is influenced by their local culture where much information is shared with other community members. MM3 explained,

We just like to express our ideas or our result of doing things. It is just natural. We sometimes discuss non-academic issue in department. For example, new reclamation issue is the current issue. We discuss it many times already. The topic can be anything actually. Besides, it is part of the culture. It is just a habit. Brought from where I come from. Well... in (the province), we are open. We share what we have, what we know. For example, if you see the craft centre in one area. Or the industry for roofing in (the province) is centred in one place. Not that they know the skill at the same time. Just one who knew first. Then he shares. For example, in (area in the province). Even the type of food is different from other areas. There is a menu, (special herb) chicken, next door will also sell the same menu, and next door also the same. It is fine.

J.1. 3. Participants who are active in Unit (Lecturer-Unit participants)

Tridharma

Teaching material

Both Lecturers-Unit at RS1 shared knowledge related to teaching material with their colleagues who teach similar subjects. Lecturer-Unit 1 shared teaching

materials with her KBK team. The result of the teaching material discussion was shared with her supervisor in the form of teaching plan reports. Lecturer-Unit 1 said,

I share knowledge in *Tridharma*. I share knowledge related to teaching material with my team. KBK team. I also share the teaching material with the Head of Technical Study Program. In form of report because we must report to the Head of Technical Study Program. We must report our reaching plan.

Meanwhile, Lecturer-Unit 2 shared teaching materials by sharing their links or softcopies as was recommended by Australian advisors. She stated,

When I have a teaching material, I share it with my colleagues such as the teaching material for Front Office subject I also share the link to the teaching material. The softcopy too... I share knowledge related to teaching material [format] based on recommendation from advisors from Australia.

Research methods

Both Lecturer-Unit participants shared their research in journals. Lecturer-Unit 1 reported, "For research methods, I share my research in journals." Lecturer-Unit 2, besides sharing her research in journals, also shared it by giving consultations to those who consulted her or were interested in her published research. She explained,

Through journals, I share my research to community. I knew it because according to people in [one of area in the province where RS1 is] my research which was about green tourism, became a reference. Sometimes people in the hotels there recommended me to those who were interested in green tourism. Even students from other universities consult me regarding eco-tourism.

Dedication to community

The sharing of knowledge related to community service was organised and decreed by the institution as they collaborated with other colleagues when they shared knowledge with the community. Lecturer-Unit 1 noted,

For dedication to community, the tourism department, usually appoints one lecturer to be the head of the team, to do the community service. This is the formal mechanism for dedication to community section. We have the decree for community service activities....

Lecturer-Unit 2 added,

For sharing in dedication to community, we do this in team. So we give training to community. Such as last time, I share to community how to make cake using the traditional ingredient that we can find around. From purple cassava for instance.

Professional Development Programs

PDP reports

The Lecturer-Unit participants must submit PDP report especially if the programs were workplace-funded. Lecturer-Unit 1 noted,

I had been few times appointed by the institution to attend trainings. After the training, we must submit the reports as the trainings were funded by institution or by BEDP. The report contained the funding that we used, the airplane ticket receipts. I submitted the report to the BEDP managers in the institution....

According to Lecturer-Unit 2, the reports they submitted were evidence of their responsibility to the program they had attended. She stated,

I attended many Professional Development Programs related to LSP [Professional Certification Unit]. I had training about how to develop a scheme, licence training, after finishing the program, I must submit a report as an evidence of our responsibility to the program we had attended.

PDP materials

Informally, both Lecturer-Unit participants shared the PDP materials from the programs they attended. Lecturer-Unit 1 commented, "I share the PDP material especially with colleagues who did not have opportunities to attend the program. The material could be in form of hardcopy and softcopy. Just informally to them." Lecturer-Unit 2 affirmed, "I share the PDP material with my colleagues. Just informally because there is no regulation about sharing the key points or the PDP material."

PDP key points

Key points from the PDPs attended were also shared by Lecturer-Unit 2 with her colleagues. She mentioned, "After attending a PDP such as related to LSP training, I share the key points from the training to my colleagues in LSP Unit. Maybe about the application forms, new information about LSP."

Current affairs

Lecturers-Unit 1 and 2 discussed social topics or current affairs with their colleagues. Lecturer-Unit 1 discussed celebrities or TV programs during recess. She recalled, "During break time or recess, we usually share current affairs. Such as the information about celebrities, about films on TV. Just informally. The male lecturers usually share knowledge related to politics." In contrast, Lecturer-Unit 2 discusses politics with her students. She explained,

I share informal topic. I mean nothing to do probably with academic. Such as topic related to politics. Well, I am quite an idealistic person. Such as about reclamation issue. Even though in the classroom. But it is informal. After that I discuss the lesson again. I share current affair with students. Just a little bit. As an intermezzo.

Unit 'service'

As Lecturer-Unit 1 was active in a unit at RS1, she shared knowledge related to the unit's service. The recipients could be her colleagues or students. She mentioned, "Since 2015, I have been one of the members of Professional Certification Unit (LSP). I examine the students' competencies. Prepare the documents. These all are through formal mechanism. LSP is under Director..."

Teaching techniques

Lecturer-Unit 2 shared her experience on teaching techniques as was shown by advisors. She recounted,

I often conduct discussion with new lecturers. The juniors. We have a project, we call it project here, and we invited advisors from TAFE Adelaide. So I shared what I had learnt from them. Just informally. About how to teach in a vocational institution like polytechnic.

Expertise

As an assessor, she shared her experience related to Front Office subjects. She remarked, "I am an assessor for front office subjects, my expertise. So I have this Asian Toolbox (guidance) related to all units' competencies. I share this to my colleagues. I often ask them to check, read the Asian Toolbox before designing a curriculum."

J.1.4. Lecturer-Teaching Participants

Tridharma

Teaching material

Both Lecturer-Teaching participants at RS1 shared teaching material through group discussions or collaboration. Lecturer-Teaching 1 shared knowledge related to teaching material in informal discussions with his colleagues. He stated,

To develop student' skill, we usually share knowledge in form of demonstration concept. Such as making a product. That is after we gave the students the theories. In the classroom. The basics knowledge about it. Then they can learn it through field-study. Then we create focus-group to find out the result. Just in informal discussion. Not many that get involved. Maybe 2 or 3 lecturers. No need formal meeting. And so far, it is effective.

Lecturer-Teaching 2 also shared knowledge in a team through collaboration with his colleagues in KBK. Even though he had the discussion with his KBK group, he shared the knowledge informally. He said,

I shared teaching material in KBK. KBK team. We discuss the teaching material. Module for example. Therefore, we could deliver the correct teaching material to our students. We do this just informally. Usually at recess time. Mostly at break time.

Research methods

The members of Lecturer-Teaching group at RS1 shared research methods by collaborating with their colleagues. Lecturer-Teaching 1 shared research methods by collaborating with his colleagues or by doing individual research. The sharing was via a formal mechanism as it was a support for *Tridharma* implementation. He also shared knowledge relating to research methods informally through journals. However, before the research was submitted, he shared it with his colleagues in order to get feedback. He explained,

When I share knowledge related to research method, I do that by collaborating with my colleagues. I am a social person. I collaborated with colleagues in my department. I do research on my own as well. But the collaborated researches with other colleagues are the formal one to support the implementation of *Tridharma*...Before I submit the research, to be published, I share it with my colleagues in small discussions. I do the sharing so that I can get feedback from them. Just informally.

Similar to Lecturer-Teaching 1, Lecturer-Teaching 2 collaborated with his colleagues by sharing the responsibilities amongst them. Then he shared the research through journals. Academic Forum discussions were also used by Lecturer-Teaching 2 to share research methods. However, he admitted that he used more informal mechanisms when he shared knowledge related to research methods. He detailed,

I share knowledge related to research methods. I usually collaborated with my colleagues to conduct research. So I did data collection with my colleagues. Observation before data collection. We collaborated to design the research questions. Then we decide the order of the name for the researchers...I also share my research in journals...I share my research methods in an academic forum. I share in that formal forum so that I can get feedback from the participants in that forum. We complete each other...I often share knowledge in research method informally. More in informal meetings actually.

Dedication to community

Lecturer-Teaching 1 and 2 shared knowledge with the community by providing training. Lecturer-teaching 1 gave training related to tourism development to the community. He said,

I also share knowledge related to community service. I usually give training, related to tourism development. Such as about English language, with my colleagues. It can be in form of role play. Or about knowing a product. Or I share knowledge to them about tour guiding. The youths in community, we introduce this matter. We show them the ethics of guides, the technics for tour guiding. We do that in tourism villages' community

Lecturer-Teaching 2 with his teaching gave training as well. He confirmed,

There are many local guides in here. So we gave them the training. But before we shared knowledge to community, we sat together as one team with other lecturers to decide what training we would provide for community. Maybe gave training relate to the language.

As one of the lecturers at RS1, Lecturer-Teaching 1 shared his knowledge related to how to make a proposal to conduct community service and research. He mentioned,

I share my knowledge with my colleagues when they make proposals or to submit proposals. For dedication to community. I motivate my colleagues to do the community service. The department form a team now to guide the staff to make a proposal...I encouraged them to do the community service. Research.

Professional Development Programs

PDP reports

A part of the Lecturer-Teaching group's obligation after attending PDPs was to submit a report. Lecturer-Teaching 1 submitted the report as evidence of his attendance at a Professional Development Program. He said,

I did many trainings or seminars. After attending them, I must submit a report to show the supervisors what we had done during the programs. This is our evidence to show the accountability. To show that, yes, we had been there attending the programs. I gave the reports to out head of department.

Lecturer-Teaching 2 explained that before they attended a program, they had to submit a proposal and after attending the program, they had to submit a report. He clarified,

In tourism department, we have PDPs such as work filed in tourism industry. Usually 2 or 6 month. We make proposal first, then we submit the proposal to attend the Program...After attending the program from PDP I must submit a report. It is regulated. The report is an evidence that it is true we were at the training place, the supervisors know what we are doing.

PDP key points

Lecturer-Teaching 2 shared the key points he attained from the PDP he attended informally with his colleagues in his KBK group. He stated,

I also share the PDPs' key points to my colleagues. Not in a formal meeting. Just in an informal one. I make a handout. Usually as part of teaching

material. I share it with my colleagues in KBK team. Because we teach similar subject in the classroom.

PDP information

Lecturer-Teaching 2 shared PDP information not only with his colleagues, but also with his supervisors. He reported, "I share PDP information. To my supervisors, the Director, and to my colleagues. Just tell them."

Expertise

Both Lecturers-Teaching at RS1 shared their expertise informally with their colleagues. Lecturer-Teaching 1 advised, "I share my expertise in tourism with my colleagues. Just informally. We complete each other because it is also their expertise." Lecturer-Teaching 2 added, "Knowledge related to my expertise is also shared. Just a discussion. Informal. Especially if it is related to teaching learning process."

Academic affairs

In a formal meeting, Lecture-Teaching 1 shared information related to student marks. He noted, "We use formal meeting to discuss more serious academic topics. Such as about students' mark. We discuss about the evaluation or examination." Related to academic affairs such as examination questions, Lecturer-Teaching 1 shared them with his colleagues who taught similar subjects. He confirmed that even though the material was similar, it did not mean the techniques to deliver the teaching material were alike. He explained,

I share knowledge with my colleagues as well. As a lecturer, we usually share knowledge to design the examination questions. To unify the question for examination. One subject is taught by more than one lecturer. We cannot make different examination question. The questions must have similar qualifications...However, teaching is art. The way deliver the material might be different. But still following the rule.

Student issues

Student attitudes in his classroom were discussed informally with his colleagues. He stated, "I discuss with my colleagues about students who were not behaved during my teaching. At break time, informally."

Current affairs

Lecturer-Teaching 1 discussed politics with his colleagues during break time. He commented, "On recess, I usually share information related to politics, or education world. Just informal discussion."

J.2. Research Site 2

J.2.1. Top Managements Participants (Top Managers)

Professional Development Program

In the area of Professional Development Programs, Top Managers shared knowledge related to PDP reports, materials, key points, and experience.

PDP reports

The Director recalled, "Before we finished training, we had, like a group discussion based on the topic being discussed...then making a report of training results. Submit it to management." Top Managers shared the knowledge they acquired after attending a PDP. They affirmed that the written report is submitted to the institution (for the director) according to regulations. The Director continued, "But at least we make a report that we submit to the institution or department. To the director...after training I make a report...it is in our duty letter. We are obligated to submit a report after attending a training."

PDP material

Besides submitting reports, Top Managers shared material from the PDP activity in the form of soft copy files, handouts or hardcopy documents, or by just informally explaining what the training was about. The First Director's Assistant mentioned that, "I share document related to training or teaching. To the units that need them...the files I had got. The hardcopy or soft copy..."

PDP results (key points/ summary)

The data revealed that key points from training are also shared through discussion with colleagues in the institution to find out which ideas from the PDP could be applied to improve RS2. The Director explained that, "I share the knowledge with colleagues in the polytechnic, the summary of the training usually. For example, maybe the planning, organising, accounting, and controlling concept has to be applied in (the institution). We discussed that."

PDP experience

Table 6.1 shows that the First Director's Assistant shared his experiences after attending a PDP. To share his experience he usually had an informal discussion with his colleagues in the department. He said that, "We share our experience in the trainings."

Tridharma

In this section, the details of what knowledge is shared regarding *Tridharma* are explained. This includes the teaching material and knowledge related to conducting research shared by the First Director's Assistant as stated in Table 6.1.

Teaching materials

As part of the application of *Tridharma*, the First Director's Assistant explained that he shared teaching materials with colleagues in his department. He noted that besides sharing hard copies of the teaching materials he also uploaded them onto the institution website as was recommended by the institution's policy on uploading teaching material. He stated, "I share documents related to training or teaching... Teaching material has to be upload onto E-Learning. We share at E-Learning." In addition to sharing teaching materials, he also claimed that he discussed the teaching materials with his colleagues in the department, as they have similar expertise. "I gather my friends (in department), explaining about the knowledge I gained from the training."

Research

The First Director's Assistant stated that he attended meetings in departments at RS2. He detailed that one of the topic discussions was usually in lecturer groups and it was about research results in a particular department. For example, in relation to the application of the research results, he declared that he might give advice to follow up the research suggestions. He reported, "I share information in the lecturers' group. For example, related to the application of a research result...I review the research from TPHP (Agricultural Technology Department)" He also discussed reviewing research proposals which he explained were usually anonymous or coded to avoid bias, and then submitted to the proposal committee. His role included providing feedback on research budget rationalisation so that the budget looked achievable and avoided confusion for the researcher. In addition, he submitted his own research proposal. He noted that, "I also submit the review of a research proposal or also about research budget rationalisation, or I share my research proposal to get feedback."

Management

Both Top Managers shared knowledge in the management area related to sub-management evaluation, evaluation concerning institutions, programs, and personnel weaknesses, and feedback, suggestions, recommendations and ideas.

Sub-management evaluation

Informal discussion between the Director and the First Director's Assistant could also be about sub-management evaluation, introspection, self-evaluation, the evaluation of weaknesses, or consciousness. The informal approach is used by the First Director's Assistant, as this kind of topic cannot be discussed formally,

Sometimes we both evaluate the sub-management. So the topic can be about management. It sometimes ends up with our consciousness: introspection, self-examination. This way of sharing is very effective... This is a talk from heart to heart. I give feedback to the director and so does he.

Corrective issues, introspective, internal management corrective action

Corrective issues, introspective, and internal management corrective action constituted the knowledge shared by the First Director's Assistant in the form of discussions with the Director. He stated, "In a formal meeting, it is limited because there are things that constrain me so as not to be 'higher' than the Director. Certain topics are better discussed informally. Corrective issues, introspective, or internal management corrective action."

The evaluation of weaknesses

The Director evaluated the institution's weaknesses with Middle Managers in a formal discussion or presentation. He indicated that, "Then I gathered the heads of departments, the planning unit, and others, to evaluate our weaknesses. In a presentation..."

Feedback/suggestions/recommendations/ideas

Besides sharing knowledge on corrective issues, Top Managers gave suggestions, ideas, or recommendations that they hope would motivate their colleagues. The First Director's Assistant, in particular, motivated his colleagues to do tasks for the community or to encourage colleagues to develop the department. He specified that, "I also share things related to how to increase the enthusiasm to community dedication. I talk to staff here about the need to be motivated to do things for community...Normally we give recommendations to do something to improve our department ..." He added, "I share my thoughts. I told the management." Meanwhile the Director gave suggestions to the government. He explained, "I share with DIKTI as well... (such as) I gave a suggestion instead of turning into a state polytechnic, [DIKTI should] form new study programs..."

Policy

The Director and the First Director's Assistant shared or circulated policies. The Director shared ideas with the government before it released a policy on lecturers' certification, the establishment of polytechnics in Indonesia, polytechnic regulation, or the Ministry's decrees for example. After that, it was his responsibility to share or circulate the policy to members of RS2. The Director recalled,

All of the policies from the centre government involved us, the directors' point of view, as their consideration. The policies we share, for example, lecturers' certification, the establishment of polytechnics in Indonesia, about polytechnic regulation, the Ministry's decrees, we were involved in order to share our point of view.

As a Director of a State Polytechnic in Indonesia he shared polytechnic issues with other State Polytechnic Directors through regular meetings. The Director explained, "I meet regularly with other polytechnic's directors. We meet regularly at a directors' forum. We discuss things like SKS..." Meanwhile the First Director's Assistant shared policies related to the application of *Tridharma* at RS2. He shared regulations related to teaching from DIKTI regarding the inquiry for lecturers to design their own teaching material. He also shared his own policy for conducting research and designing teaching material. He shared the information formally as he explained lecturers must know the requirements of different grants. He stated,

I share information about policies. For example there is a new regulation from DIKTI regarding to the new rule that a lecturer must produce her own teaching module or material...I also share my policy here... Also (share) policy regarding (conducting) research.

Religion

The First Director's Assistant also shared his knowledge in the area of religion in the evening or after work hours to remind others about '*amanah*' being chosen as leaders in the institution, the willingness to dedicate one's life to the institution, and the meaning of life. He stated that he usually shared his views with the Director,

Normally it is about...well, we remind each other, that we have '*amanah*'...it is more about religious discussion. Not expertise knowledge. It is knowledge about religion. So with the Director, we talk about the meaning of life; and second, about our willingness to work for this institution.

Classroom management

As stated in Table 6.1, the First Director's Assistant gave advice to colleagues informally on how to improve classroom teaching in the Department where he lectured. He stated, "For example about how to improve teaching process in

classrooms: I inform them, just talk, maybe about classroom characteristics which may need improvement by management.”

Administrative issues

The First Director’s Assistant shared information about staff who were the structural members in the department to students. He noted that, “I also share with students. For example, I once interviewed a student and he did not know his head of study program (and) the head of the workshop.”

Sharing documents with the government: DIKTI and DPR (House of Representatives)

The Director shared documents with the government such as the DIKTI and members of the House of Representatives because as a director, he must submit administrative forms through a formal mechanism. He recounted that,

We do share documents formally. It is sometimes from DIKTI, we have to fill some forms, then we share them to DIKTI formally. It can be hard copy and soft copy...if it is urgent, we use soft copy. For example, I urgently had to share a file about the engineering decree to the DPR.

J.2.2. Middle Management Participants (Middle Managers)

Tridharma

Regarding *Tridharma* area of knowledge, Middle Managers at RS2 shared teaching material and knowledge related to Dedication to Community (Community Service).

Teaching materials

The Head of the Professional Unit and the Vice Head of the Technical Department shared teaching materials with colleagues. They also shared knowledge with students during the teaching and learning process. They shared teaching modules and job sheets. The Head of the Professional Unit said, “I share not only modules with the lecturers who teach entrepreneurship.” Meanwhile, the Vice Head of Technical Department mentioned that, “With our students, we share module, job sheets. I also share modules with my friends. Teaching materials.”

Dedication to community

The Head of the Professional Unit shared unit services with the community; for example, he shared how to operate a machine and shared knowledge related to

management not only with the community but also with his colleagues. This could be done by training them or just in a formal discussion. The Head of the Professional Unit recalled, "I trained staff to operate them... We must share to our friends in (RS2) as soon we get back from the training in the form of TOT [Training of Trainers]."

Unit services

As the Head of a Unit, the Head of the Professional Unit shared knowledge related to the service that the unit provided either to the community or to colleagues. He shared knowledge related to business issues, doing business, using body language to do business appropriately, and how to market a product. He shared his knowledge at formal opportunities. The Head of the Professional Unit also shared knowledge about the product they had produced, such as mineral water as was mentioned in Table 6.4, and a formal discussion was scheduled to circulate the information about the product. The Head of the Professional Unit stated,

I share knowledge in business field as well... therefore, we would like to contribute to society the product, mineral water, which is healthy and drinkable... we also schedule the formal discussion... I also share how to share entrepreneurship: maybe about the body language...about how to market the products and so on. I share with them cash flow management. We discuss or share things formally to keep the sustainability and accountability of the business.

Professional Development Programs

Middle Managers at RS2 share PDP reports, key points of discussion and other information.

PDP report

As members of RS2, The Head of the Professional Unit and the Vice Head of the Technical Department were obligated to submit a report after attending a PDP to the Director or Head of Department as it is regulated for all members. The Head of the Professional Unit declared, "We submit a report...We also give a report to management." The Vice Head of the Technical Department recalled, "The report to the Head of Department is in document form, hardcopy where I put information about what the training was about and the material I got during the training."

PDP key points

After attending a PDP, Middle Managers shared key points with their colleagues and the Director. Even though they were not required to share the PDP results, the Vice Head of the Technical Department assumed that sharing was

expected by his colleagues. Both Middle Managers discussed the key points formally and informally. The Head of the Professional Unit stated, "For example, if I attend seminars or workshops, after completing the programs, I will gather my friends, and share the knowledge" He added, "Informally. I meet the director and tell him about the training I did." Meanwhile, the Vice Head of the Technical Department explained, "Because the training was about plagiarism, as soon as I came back, I was expected to explain what I had got in the training to other friends...I share the training result too. Directly. In a meeting."

PDP information

The Vice Head of the Technical Department shared information related to training to his colleagues in the department. He said that, "share information related to training."

Policy

As the Head of a Unit at RS2, The Head of the Professional Unit circulated policies (new policies or changes to policies) to colleagues in the institution formally or informally. He described, "When we explain about a new policy, for example...I also do it in informally. For example, the legalisation procedure. I gathered my colleagues."

Management

The Head of the Professional Unit and the Vice Head of the Technical Department shared knowledge related to management such as knowledge concerning the institution or organisation, IT problems, the development of programs, the Professional Unit, or knowledge regarding cooperating and entrepreneurship, in informal discussions. The Head of the Professional Unit mentioned, "The topic of my sharing can be about institution, IT problems, development program, entrepreneurship, or about cooperating." The Vice Head of the Technical Department added, "We normally discuss about organisation, management."

Expertise

The Head of Professional Unit is also a lecturer in the Electrical Engineering Department and has an interest in IT. He shared knowledge with colleagues at the IT Unit and they worked together informally to prepare a website. Meanwhile, the Vice Head of the Technical Department with his mechanical engineering background, shared his knowledge related to solar cells with his colleagues and

students. He gave feedback on the topic related to the lecturer's expertise as well. The Head of the Professional Unit recounted, "I am active in IT unit. We are preparing a website now...We also share through the website, emails...As a lecturer, I share about how to utilise IT." The Vice Head of the Technical Department reported, "Mostly, we share things related to our expertise or our job. For example, about solar cells...I give feedback in discussion."

Teaching Techniques

The Head of the Professional Unit shared his teaching techniques on entrepreneurship teaching formally not only in the internal institution but also with other State Polytechnics such as in Padang and Ketapang. He demonstrated how to use the module (teaching material) to recipients by role play. He said, "How to deliver the teaching material, I share how to use the module, how to play the business game, like a role play."

Reports

Reporting was one form of sharing conducted by the Vice Head of the Technical Department with Top Managers. He said, "With Top Managers, usually it is about reporting (activities of a program/project/event)."

Student issues and problems

As one of the Middle Managers in the department, the Vice Head of the Technical Department shared knowledge with his colleagues both formally and informally related to student issues such as the challenges faced by students to learn certain subjects. He also shared student problems, and evaluated the delivery of teaching material in classrooms with his colleagues in the department. He explained, "We try to find out why the students find it challenging to learn physics...We discuss students' problem with lecturers, asking if the teaching material has been delivered or not. And we check again their problems in other subjects."

Administrative affairs

As a Middle Manager in the department, the Vice Head of the Technical Department dealt with administrative issues as was stated in **Table 6.4**. Therefore, the knowledge he shared was also related to administrative issues such as student marks and departmental budgets. The knowledge was usually shared in a formal discussion, such as at the end of semester meeting. He stated, "Mostly, we share

things related to our expertise or our job... we do share the topic outside teaching topics. We also share about students' marks, and the budget..."

J.2. 3. Participants who are Active in a Unit (Lecturer-Unit participants)

Tridharma

The findings in Table 6.7 show that regarding *Tridharma*, the Lecturer-Unit group at RS2 share knowledge such as teaching materials, conducting research, and dedication to the community.

Teaching materials

Lecturer-Unit 1, 2, and 3 shared teaching material with colleagues in their department or colleagues who had similar expertise or were teaching similar subjects. They shared teaching Power Points, modules, books, and soft copies of teaching materials. They also shared teaching materials with their students. Besides sharing documents, informal discussion related to teaching materials also took place. Lecturer-Unit 1 said, "I share modules, usually with friends who teach a similar topic...we share teaching documents as well, power point, modules, book, hardcopy...I shared the power point. Then we ended up in discussion...just informally...We have used softcopy for teaching material storing." Lecturer-Unit 2 mentioned, "I share knowledge in teaching modules." Lecturer-Unit 3 stated: "I share teaching material... informally."

Research Methods

Lecturer-Unit participants shared knowledge related to conducting research. They often had discussions related to research topics and Lecturer-Unit 2 shared information on research funding. Lecturer-Unit 1 and 3 shared articles about research, such as guidelines for conducting research or writing research reports. The discussion was usually in an informal meeting and the documents were shared in hardcopy or softcopy files. Lecturer-Unit 1 recounted, "I also share topics related to research...so I share them my RAB...what we share is usually a research report, PKM report." Lecturer-Unit 2 added, "I share information about research as well." Meanwhile, Lecturer-Unit 3 recalled, "I usually share articles for example. Guidelines for conducting research."

Dedication to the Community

Lecturer-Unit 3 and his colleagues fulfilled the requirements for dedication to the community, by teaching English in rural areas. They worked together on the

proposal to teach the community where Lecturer-Unit 3 shared his ideas in informal discussions. He said, "A proposal related to teaching English in the rural area. I shared this idea with two other friends."

Professional Development Programs

PDP report

Like other members in State Polytechnics in Indonesia, the members of the Lecturers-Unit group at RS2 are obliged to submit a PDP report to the Director or Head of Department after attending a program, especially when the program was workplace-funded. The report provided the evidence of their attendance which included the schedule, materials, or the key points of the program that might be applied to improve the institution. Lecturer-Unit 1 reported, "It is from a grant, and we must submit a report as evidence." Lecturer-Unit 2 also mentioned a similar process. She said, "I make a report. Part of my obligation. The report is in hardcopy form." Lecturer-Unit 3 said, "We make a report."

PDP results/key points

Lecturer-Unit 2 and 3 shared results or key points of PDPs they had attended with their colleagues who had similar expertise if it related to their expertise. If the participants were her colleagues in the department, Lecturer-Unit 2 usually shared the results in an informal discussion. However, if the results were shared in her unit, a formal mechanism took place. Besides sharing PDP results in discussions, they also shared the documents, which could be in hardcopy or softcopy. Lecturer-Unit 2 said, "I share training result too with my friends...I share knowledge in a formal discussion in UKB. Not in the department." Meanwhile, Lecturer-Unit 3 tended to share the key points of a PDP he attended with his students during the teaching-learning process. He recounted, "After the training we implement the knowledge. I implemented it for my students."

PDP material

The members of the Lecturers-Unit group shared PDP material as well. They usually shared the material if their colleagues asked for it. The sharing was usually with colleagues in the department or unit. The sharing of PDP material depended on the topic of the material. The material shared could be in hardcopy or softcopy format. Lecturer-Unit 1 reported, "Those who need the material from the training, are welcome...documents too." Lecturer-Unit 2 shared the material from the training with colleagues. She said, "I share knowledge from a training...We copy

the material, then we share it. I offer them if they would like to copy the material.” Lecturer-Unit 3 also shared the material when colleagues asked for it. He stated, “Some of my friends who mentored students for the competition, asked for the material. So I shared it with them. I shared the hardcopy I got from the training.”

PDP information

Lecturer-Unit 3 was actively sharing or forwarding any information related to PDPs such as information about a conference. He recounted, “I share teaching material, information about trainings, conferences...I often forward a lot of information about seminars.”

Proposals

As a lecturer who was also active in a unit, Lecturer-Unit 1 shared proposals for certain projects or activities with her colleagues in the institution who came to her unit for the proposal. She usually shared the documents in softcopy. She stated, “If friends need a proposal for example, we share the document to them.”

Religion

Lecturer-Unit 1 had informal discussions with colleagues on religious topics, especially if she had a new book about the subject. She was also happy if her colleagues wanted to borrow the book. She reported, “Related to religion, for example, we need friends to know the information, so I share it. Just a discussion or we lend them the book.”

Learning Techniques

As a lecturer, Lecturer-Unit 2 and her colleagues were expected to design teaching materials. Lecturer-Unit 2 also shared experience about how to teach the module easily to students. She recalled, “In classrooms, I share knowledge of teaching modules, and the technique to learn it easily.”

Expertise

As lecturers, Lecturers-Unit had different background knowledge and usually, they shared their expertise, as was illustrated in **Table 6.7**, with their colleagues in the department as they had similar expertise. They shared knowledge through discussion or by sharing documents. Lecturer-Unit 2 gave advice regarding the budget to her colleagues. Lecturer-Unit 1 shared her expertise with her students during the teaching-learning process in the classroom and shared the budget plan (RAB) with her supervisors. Meanwhile, Lecturer-Unit 3 shared knowledge with his

fellow English lecturers if the knowledge was about teaching English. Lecturer-Unit 1 said, "We share our knowledge of expertise. I mainly applied knowledge to my students, for example about the RAB. I discuss a lot with the leaders about this topic." Lecturer-Unit 2 who is from the Accounting Department mentioned, "I share hardcopy, softcopy, either using USB or sending it through email. So I give advice on which items should not be included, which ones can be included, in SPJ for example." In the meantime, Lecturer-Unit 3 who taught English recalled, "So when I get knowledge related to English, I share it with my fellow English lecturers."

Classroom Management

Lecturer-Unit 2 shared experiences with her colleagues about techniques to manage students who came late. She described, "I share classroom management, for example, how to manage students who come late."

Unit data/vision/discussion

Lecturers-Unit are lecturers who are also members of other units. Therefore, they have the opportunity to share knowledge related to their unit's service with colleagues in their unit or with other members of the institution. Lecturer-Unit 1 said, "In UKB, we share data mainly. So through email will be fine." Lecturer-Unit 2 discussed her unit's work with her colleagues who were also active in the unit, "In UKB we do not discuss our expertise. We talk about our work in the unit." Lecturer-Unit 3 shared information about insurance claims or about SOP. He explained, "In UKB, I share information. Just informally. What we share is about information related to insurance claim, how to make SOP."

Information and Data Sharing

Lecturer-Unit 2 and 3 shared information or forwarded information from other colleagues. The information was usually about their expertise or linked to other websites. Lecturer-Unit 2 reported, "I inform them...please use this, the attachment, to set the budget." Meanwhile, Lecturer-Unit 3 said, "I share links from the website."

Student issues

All lecturers, including the Lecturer-Unit group, belong to a particular department and they teach in certain departments as well. Therefore, student issues such as student marks are their concern. Lecturer-Unit 3, shared this information with department management. Lecturer-Unit 3 said, "I also share knowledge with

management in my department especially about the students' marks. Also about students' affairs."

Current Affairs

Besides sharing academic knowledge with the management or unit, Lecturer-Unit 2 shared current affairs such as social issues or politics issues informally. She recounted, "We share topics related to social issue, politics."

J.2.4. Lecturer-Teaching Participants

Tridharma

Teaching material

Both Lecturer-Teaching participants shared knowledge related to teaching material such as job-sheets and modules with colleagues, especially those with similar expertise and with students during the teaching learning process. Lecturer-Teaching 1 stated,

I share theories through teaching-learning process in the classroom...I share teaching material... I share teaching material like module with other Indonesian language lecturer informally...I share with other lecturers when they ask me to share. Sometimes we exchange the teaching material...I share because they ask me to. Through sms. Maybe because I am more experienced. Just informal discussion.

Lecturer-Teaching 2 shared teaching material with colleagues who teach similar subjects. She mentioned that,

I share teaching material or job sheet. With a colleague who also teach similar subject I share job sheet. We are in the same team for teaching this subject. I share the knowledge through email...I also share other teaching material with other lecturers.

Research

Lecturer-Teaching 1 and 2 shared knowledge on research methods informally through collaboration or just sharing it in an informal discussion. Lecturer-Teaching 1 said, "I do research with some of my colleagues. We share. ...I share with my colleagues about research so that they share back or give me feedback...I share knowledge related to research in informal discussion. Discussion. Then I borrow their research." Meanwhile, Lecturer-Teaching 2 used her free time before teaching to discuss her previous research experiences informally in the lecturer room. She recounted, "I share knowledge in research as well. Informally. In campus, in lecturer room I mean, maybe while waiting for my teaching hour, with other

colleagues about my previous research. Just informally. Chatting. About my experience when doing the research. About what I did”

Dedication to the community

The sharing of knowledge related to the third point in *Tridharma* was conducted informally through discussion with colleagues. The actual dedication to the community program is carried out formally as part of the institution’s program. Lecturer-Teaching 1 mentioned, “I share about dedication to community informally. To my colleagues. Just a discussion about a plan to do activity for this point. I also did like an information sharing, about entrepreneurship, in rural area. A junior high school in Ambawang.” Lecturer-Teaching 2 shared the information about the proposal submission date. She said, “I share to colleagues. I hope that they will be motivated to submit the proposal for PKM (dedication to community). They need to know the schedule to submit the proposal.”

Expertise

Related to expertise, Lecturer-Teaching participants shared their background knowledge with colleagues who had similar expertise. The sharing was mostly with colleagues within the department since they had similar background knowledge. Lecturer-Teaching 1 recalled, “I share knowledge expertise with colleagues who have similar expertise.” Meanwhile, in sharing her expertise, Lecturer-Teaching 2 did not share it with colleagues with different background knowledge. She recalled, “I usually share with colleagues in my department. With similar expertise. I do not really share with colleagues who have different expertise.”

Classroom management

Student behaviour

Lecturer-Teaching 1 shared knowledge related to student behaviour informally with colleagues in the department. She recalled, “I share knowledge about students’ behaviour, such if the students are not serious during teaching-learning in the classroom. Just informally...”

Classroom condition

Besides sharing the students’ behaviour, Lecturer-Teaching 1 also shared knowledge about classroom conditions. She noted, “I share about the classroom condition with colleagues in department. Also about students’ behavior.”

PDP key points

After attending a Professional Development Program Lecturer-Teaching 1 shared the key points of it with her colleagues. She stated, "After attending a PDP, I share the key points or result to colleagues. Such as after I attended training about dedication to community. Just informally, with colleagues in my department."

J.3. Research Site 3

J.3.1. Top Managements Participants (Top Managers)

Professional Development Programs

Members of the Top Management group shared knowledge related to Professional Development Program results, information, reports, and material they received at the PDP. The Director also shared colleagues' PDP reports with other colleagues.

PDP result (key points)

As lecturers, the Director and the Director's Assistant must advance themselves by attending PDPs regularly. After attending them, they shared the results or key points. The sharing might be through formal discussion or by sharing notes with the heads of the departments, which contain key points of the PDP attended. The Director recounted, "I share the knowledge I'd got from a course....Just a note that I share with the heads of departments...." The First Director Assistant also mentioned the same, "I share key points from the PDP....."

PDP information

The Director at RS3 also shared information from PDPs with subordinates in formal meetings. He recalled,, "I am obligated to deliver the information I got from a program".

PDP report

The Top Managers at RS3 must submit a report after attending a PDP to the Director. The First Director's Assistant shared the report with the Director. The Director stated, "I need to make a report. If the programs were from DIKTI, sometimes DIKTI asks us to make a report..."

PDP material

Top Management participants shared key points and other materials from PDPs. The Director started with sharing his experience or the key points from the PDPs and would share the material with those who wanted it. He noted, "I explain what the training is about and offer them the material if they would like to copy it." The First Director Assistant added, "...when attending the training about KKN [Kerangka Kualifikasi Nasional Indonesia/Indonesia's National Qualification Framework]. After that, we shared the document."

A colleague's PDP report

Reports from PDPs attended by staff at RS3 were submitted to the Director. The Director would share the report with his Director's Assistants if he thought that the Assistants needed to know about the issues, or needed to re-share them with other heads of departments or units. He remarked,

For example, when they attend a training, after finishing the program, they come to me and reporting about the training. They also make a written report. Hardcopy. They sometimes also share it face-to-face. For example, I order my 3rd Director's Assistant. Or yesterday I asked my PR to attend the socialization about e-KTP [e-ID or electronic identity cards]. After that, he submitted the report, then I gave it to my 2nd Director's Assistant.

Recommendations/feedback/advice

Both Top Management participants shared recommendations, feedback, or gave advice to subordinates. Recommendations were usually shared with government (DIKTI), while feedback was usually shared with colleagues. The Director mentioned that he gave recommendations to DIKTI normally through a formal mechanism and gave advice to subordinates in informal discussions. He explained, "We agree [about the commencement date], then we recommended it to DIKTI, DIKTI agreed." And to his subordinates, he said, "[when they share knowledge with him]... I share back by giving advice to them sometimes... How to improve himself, and tell him that he did a good job. So I share this knowledge, advice, so that he feels confident..." Meanwhile, the First Director Assistant gave feedback to his colleagues. He believed that his feedback would complete his colleagues' knowledge as well. He recounted, "I share or give feedback because by sharing, we complete each other..."

Participation (Motivation)

Aimed at motivating members in the organisation by his presence and sharing his ideas in a meeting, the Director usually involved himself in the units' or

departments' activities. He explained, "If I need to come, and for certain meetings for example, an IDP meeting. I am involved [in the discussion]. It is good to motivate my friends ..."

Reports

The First Director's Assistant reported that he must submit a report of an event [after an event. For example RS3's anniversary, the committee must submit a report which included the information on how the budget had been spent, documentation, or how the celebration went to his supervisor. He stated, "we must submit a report to the Director..."

Information

As a member of the State Polytechnics' mailing list the First Director's Assistant shared information with other members. He elaborated,

So I often share information with the members in [the] mailing list...it can be formally or informally. I have a mailing list. I am the head of Polytechnics' 1st Director's Assistant' forum, so I often share information with the members in the mailing list. In here, we have regular meetings where we can share a lot in those meetings. We up-date our information there. We also do informal meetings.

Policy

The First Director's Assistant shared policy, regulations, or technology information, through an informal discussion with his colleagues in the institution. He explained, "We also have informal meetings. Usually about policy, about the regulation of certain expertise, and technology development, .."

Administrative issues

The First Director's Assistant mentioned that he attended the department meetings to share administrative issues with subordinates. He recounted, "The management come to the meeting when it has to do with all of the departments. For example, about certification, quality control."

J.3.2. Middle Management Participants (Middle Managers)

Tridharma

Teaching material

The Heads of Technical Study Program 1 and 2 shared teaching material with students or colleagues in the Department where they teach. They shared teaching material such as modules with their colleagues in their departments. The sharing of

teaching material with the students occurred during the teaching-learning process in the classroom, while the sharing with colleagues is usually carried out in a formal meeting. The Head of the Technical Study Program 1 explained,

We usually share teaching modules among kepala kelompok pengajar(head of expertise group). In a formal meeting. For example, kepala kelompok pengajar digital, for example. We share knowledge, such as teaching modules, in the same expertise group.

The Head of Technical Study Program 2 noted, "Related to [the] teaching process, I share knowledge to my students. Module."

Research Methods

Both Middle Managers at RS3 shared knowledge related to research methods. The Head of Technical Study Program 1 worked together with colleagues to obtain research funding. They shared their knowledge in research methods formally and informally. The Head of Technical Study Program 1 stated,

I also share knowledge related to conducting research. We manage the research funding from the government together...there is no standard for that. We just share it informally. The formal one is in yudisium. We cannot do it formally all the time because we have tight teaching schedule.

The Head of Technical Study Program 2 shared research method knowledge through journals. He said that, "Related to conducting research, it is the job for the committee. The sharing can be through journals."

Dedication to community

The Head of Technical Study Program 2 said he achieved his dedication to community by building and establishing small electrical generators and training the younger generation in youth organisations in villages. This was his dedication to community and there was no need to be rewarded. He explained,

I also share knowledge to community, through dedication to community programs. My friends and I often do this. For example, we establish small electrical generators, or share knowledge and train young generation in youth organization in villages...

Professional Development Programs

PDP results (key points)

The members of Middle Management at RS3 shared key points from the PDPs they had attended. The Head of Technical Study Program 1 shared the key points by gathering his colleagues or by sharing books. He did the sharing also because he was asked by other colleagues. He stated,

After attending a PDP, we gather our colleagues, tell them what the training was about. We also share the books sometimes. The training which I attended was usually about electrical subject. That is our expertise here. So with other lecturers, sometimes they ask about the training.

The Head of Technical Study Program 2 shared the key points of the PDPs he had attended, not only with his colleagues at RS3 but also with stakeholders formally. He also shared the key points informally by uploading the information to the RS3's website. He clarified,

(I was) appointed by top managers [to attend a training] then after finishing the training, share the knowledge I get from the training to my colleagues, then to the industry. Stakeholder. We have to know what the stakeholders need at the moment, what is the trend. It is an official sharing... For training result, we just start it this year. We upload the training result in our website. We have regulation for that...

PDP report

After attending a PDP, both Middle Managers were required to submit a report detailing the program they had attended. The Head of Technical Study Program 1 explained that the report was submitted to the Director or to the head of department. It depended on who requested them to attend the PDPs. He also informed that he shared the reports with his colleagues. He declared that,

It should be submitted [the report]. Like in our official permission letter to join the training, it is said that when we finish the program, we must make a report...to our top management. Submitted to our director...it can be in softcopy or hardcopy. But usually hardcopy...it is possible when the department which asked me to attend programs. It means I submit the report to the head of department...then I share the training report to my colleagues...

The Head of Technical Study Program 2 added that he submitted the report to Top Management as well. He mentioned, "We invite the head of laboratories, head of lecturers group, and others. Then share it [the report]. Another rule is, after training, we must submit a report to top management..."

PDP Information

The Head of Technical Study Program 2 shared information related to PDP information with colleagues in his department in an informal situation or discussion. The Head of Technical Study Program 2 reported that, "usually I share hardcopy form. I also share the information or training result informally..."

PDP material

Both Middle Managers at RS3 shared PDP material with their colleagues. The Head of Technical Study Program 1 shared PDPs' material in the form of hardcopy.

He put the hardcopy material on the table and everybody was welcome to borrow it. The Head of Technical Study Program 1 stated, "Usually hardcopy document...well, it is like this. Usually, from a training, we get modules. I just put in on my table, whoever want to read it, please do. Just informally..."

Academic affairs

Both Middle Managers at RS3 shared knowledge in the area of academic affairs. The Head of Technical Study Program 1 shared knowledge on the syllabus or curriculum in informal meetings on semester break. Informally, they shared knowledge on academic affairs during lunch break or semester break. He stated,

We design curriculum and syllabus for teaching. We do this sharing usually on semester break. In formal meetings. but we also share during lunch break for example. Well, with so many classes, five days a week is not possible for us to have many formal meetings. We do sharing informally at lunch break or on semester break...

The Head of Technical Study Program 2 shared knowledge on student attendance. He mentioned that, "For academic affairs, for example, the sharing of data related to students' attendance. So automatically, if the students are absent for 20 hours, they will get a warning letter. So what we do is just put the data there..."

Current Affairs

Informal discussion about any topic (current affairs) was considered to be important, as during work hours they were unable to have discussions with other department members. They had this informal meeting in the form of *arisan*⁶, on a monthly basis. The distance between one room to another was also a limiting factor in their opportunity to have discussions. Therefore, a pre-arranged monthly informal meeting such as in *arisan* was important. The Head of Technical Study Program 1 stated,

For informal meeting, well...we have *Arisan*, gathering. There are about 40 staff here. For *Arisan*, we meet every month. We meet in one of staff member's house...the ladies, spouses, they are. The males make our own discussion, about anything...Informal discussion is very important. Not every

⁶ An *Arisan* is unique to Indonesian culture. It is a form of savings cycle and credit group, and it is an organised informal meeting or gathering. *Arisan* gives a purpose for members to meet for their mutual benefit. It also cultivates the value of *Silahturahmi*, which is a communal gathering recommended by Islam values. *Arisan* is an informal social network member gathering that usually takes place at regular intervals, and rotates to each member's home. Each *Arisan* members' name is placed on a piece of paper, which is then rolled tightly and placed into a bottle. The bottle is then shaken and tapped until one rolled paper drops out. The name on this paper is the winner of that *Arisan*. Each member is required to attend and pay each time until a full cycle of the *Arisan* has occurred; in this way, each member is returned his or her total investment. A payment from each member is collected by the rotating *Arisan* holder who provides food for the attending members.

day we can talk with our friends. For example, not every day I can talk with my friends from warehouse because I am in theory area. Warehouse is a bit far from here. Sometimes I meet them once a week. Sometimes not at all. So we meet in my friends' house every month...

Management

As one of the Middle Managers at RS3, the Head of Technical Study Program 1 shared knowledge with Top Managers. The sharing was normally related to management relating to the institution's development or campus. The Head of Technical Study Program revealed that, "With top management (we) usually (discuss) general topic...not about expertise. Usually about this campus. This institution...it is effective."

Expertise

With background knowledge in electrical engineering, the Head of Technical Study Program 2 shared his expertise in informal discussions with his colleagues. He recounted that, "With my friends, just informally. I share information related to electrical. My expertise. Just discussion. Do not really share document..."

Information for stakeholders

Information related to the institution was shared with stakeholders who also sent emails to departmental staff if they needed experts for example. The Head of Technical Study Program 2 stated that, "We have UPP in this Polytechnic. If there is information related to stakeholders for example, it will go there and they will share it with us through email. And, for example, if they need this or that, need experts, and so on..."

Institution' data

In order to share and discover other institutions' information, the Head of Technical Study Program 2 also shared the RS3's data in softcopy so that he would be able to make comparisons between his institution and other institutions. He explained that, "I share softcopy too. For example, I attend a workshop. I share data softcopy to other participants as a comparison. So we can see the subject from Malang State Polytechnics, Bandung Polytechnics, or other universities."

J.3. 3. Participants who are active in Unit (Lecturer-Unit participants)

Tridharma

What knowledge is shared' by Lecturer-Unit participants at RS3 shows that in the *Tridharma* area of knowledge, Lecturer-Unit groups shared knowledge such as

teaching material, research methods, and dedication to community. The details are as follows:

Teaching materials

The Lecturer-Unit participants at RS3 shared knowledge related to teaching materials and they normally did the sharing at a formal meeting such as in KBK (expertise group). Discussion on the material took place as well during the meeting. Lecturer-Unit 1 said,

We also share teaching material, because one subject is handled by more than one lecturer... My friends also share in KPS. Such as middle management, or head of labs, or head of team. They are all lecturers and technicians...for teaching, related to teaching process, I share teaching materials, curriculum, we always discuss these topics...

Moreover, Lecturer-Unit 2 shared materials such as teaching modules. He gave feedback for module design, so that he and his colleagues who were all in the same KBK group (installation group) could improve their teaching material. He stated,

Related to my job description, I share teaching modules. I give feedback for module design. I do a lot of discussion. In KBK, for example, teaching group for installation (subject). I am in installation group. What we do, we evaluate out teaching material. We give feedback how to improve our teaching material.

Research methods

Both Lecturer-Unit participants shared knowledge related to research methods. Lecturer-Unit 1 collaborated with her colleagues. She claimed, "I share knowledge related to conducting research... when we do research, we sometimes collaborate with other friends...." Lecturer-Unit 2 shared knowledge too, by finding a technique to improve the process of the final report system for students. He noted that, "Related to conducting research, we manage the final report system for students. We share our idea to improve the process..."

Dedication to community

Lecturer-Unit 1 shared knowledge related to dedication to community by sharing any information from DIKTI, or other organisations with her colleagues. He claimed,

I share knowledge related to dedication to community...I usually share information from DIKTI or from this organisation, for example related to dedication to community. I normally share it informally to colleagues. Most of the sharing is actually informal.

Professional Development Programs

Regarding Professional Development Programs, both Lecturer-Unit participants at RS3 shared knowledge such as reports, results/key points, material, and information.

PDP reports

Lecturer-Unit participants at RS3 must submit a PDP report after attending a Professional Development Program. Lecturer-Unit 1 submitted a report after attending a PDP which was held outside RS3. As for an internal PDP, she did not need to submit a report. She recalled, "After that, we submit a report to finance department. To the institution. But if it is just internal training, no need to submit a report..." Similar to Lecturer-Unit 1, Lecturer-Unit 2 submitted the PDP report after attending a program. However, if it was only a seminar, he did not need to submit a report to the institution. He said, "After PDPs, we must submit a report to the institution. To the finance department usually...But if it is only seminar, we do not need to make a complete report. Only for training, short course..."

PDP results/key points

The members of the Lecturer-Unit group shared key points or the results of PDPs they had attended. Lecturer-Unit 1 shared key points from a program she had attended informally with her colleagues. She mentioned that,

I share the professional development program result...I also just informally share with my friends. An informal discussion. Sometimes they ask me about the training I had attended...But we also have internal training. In that training, if I am the speaker, I have to share the knowledge related to the topic then...

In the meantime, Lecturer-Unit 2 shared PDP key points not only with his colleagues, but also with his students. He reported: "I share training results to my colleagues informally. The colleagues who have similar expertise, power system and installation. We meet, we talk. But we actually share the knowledge we get from training to our students."

PDP material

Lecturer-Unit 1 shared training modules with her colleagues. As there was no regulation regarding sharing the material from a PDP she attended, therefore, the sharing of PDP material was informal. She just put the material in her study program cupboard and her colleagues were welcomed to borrow it. The Lecturer-Unit 1 stated,

I share documents. Usually training modules, the hardcopy...But to share training material, I use hardcopy...My friends can borrow it. I put it in study program cupboard. There is no procedure for sharing documents. If they need the document, they can borrow it. It is in the cupboard...

PDP information

Besides PDP material, Lecturer-Unit 1 also shared information related to PDPs such as information about upcoming conferences, training, or seminars. She reported, "If the training is related to my expertise, I usually share the information informally... or information about conferences, trainings, or seminars, I use IT".

Classroom management

Lecturer-Unit 1's knowledge related to managing a classroom or improving the teaching learning process with her colleagues. She explained, "For example, during teaching learning process in classrooms, I see something is needed to be improved, I will inform them -all of my friends, students, technicians, administrators, Director's Assistants-of it. I share with them, because I have to share the information with them. For example, during the teaching learning process in classrooms, I see something is needed to be improved, I will inform them of it."

Feedback

Lecturer-Unit 1, gave feedback to her colleagues in a formal meeting. She admitted that she also received feedback from her colleagues. She said, "I get a lot of knowledge in an informal meeting. In a formal meeting, we get a lot of information regarding policies, and we can also give feedback. So everybody will have a chance to share. Other people also give feedback on my opinion."

Academic affairs

Lecturer-Unit 1 shared knowledge in the area of academic affairs including knowledge related to curriculum. The sharing she did was in a formal discussion through her Department's formal meetings. Lecturer-Unit 1 stated, "In my department, the formal meeting is at least twice a semester. But sometimes we have a special meeting, for example, regarding the curriculum. But for informal meeting, we do not have the schedule. It just happens naturally."

Expertise

Lecturer-Unit 2 shared knowledge in the area of his expertise both formally and informally with his colleagues. He said, "Just informally (share expertise). We use forum to discuss something related to our expertise formally (as well). We have

a formal one here. Once a year meeting. But, as it is once a year, we cannot wait to share if we have a new knowledge. So we just share it informally once we have knowledge.”

Administrative documents

In the area of knowledge administration, Lecturer-Unit 2 shared administrative material such as SOP (Standard Operational Procedure) in hardcopy or softcopy. He reported, “I share documents. Used to be in hardcopy, but now in softcopy file. I usually share SOP, SOP of equipment.”

Books

Lecturer-Unit 2 shared his books with his colleagues either in hardcopy or softcopy. He noted that, “I share document. Used to be in hardcopy, but now in softcopy file...power book, also softcopy of books from overseas. Even in our library, they provide the softcopies now. For sharing document, now I use IT. No procedure for sharing softcopy. We just share. We share document to colleagues in department, top management, or central government, and to our students...”

Student issues

Lecturer-Unit 2 shared student issues informally. When he was asked if he shared knowledge at recess, he noted, “I also share, just discussion informally...but usually the topic about students.”

Current Affairs

Lecturer-Unit 2 shared current affairs informally with his colleagues. He mentioned, “I shared social topics. Just an informal discussion with colleagues on the current information.”

Unit’s Service

Lecturer-Unit 1 shared information with other colleagues because this was part of her job as a co-ordinator in a unit. She said, “If it is related to my job as a coordinator, I share the information.”

J.3.4. Lecturer-Teaching participants

Tridharma

In the *Tridharma* area of knowledge, Lecturer-Teaching at RS3 shared knowledge related to teaching material, research methods, and dedication to community (community service).

Teaching material

Lecturer-Teaching 1 and 2 shared teaching material with their colleagues. Lecturer-Teaching 1 had discussions with other English lecturers at RS3 to decide the material to be delivered to their students, based on the syllabus, what the activities are, and the assessment for the students. Lecturer-Teaching 1 said that,

As a lecturer, we share teaching material informally. Among English lecturers, we have discussion. We have the syllabus but we usually try to adjust it to the students. Which material that we must deliver this semester, what are the activities, what are the assessment. Just in informal discussion.

Lecturer-Teaching 2 shared teaching material with her colleagues by collaborating with other colleagues who teach similar subjects. She also shared teaching modules with them. Lecturer-Teaching 2 informed, "First, I share teaching material, as a lecturer. So I share by collaborating with other lecturers who teach similar subject. Design teaching material that based on SAP (*Satuan Acara Pengajaran*)...share teaching module..."

Research methods

Both Lecturer-Teaching participants at RS3 shared knowledge related to research methods. Lecturer-Teaching 1 shared ideas on the research topic with her colleagues informally. She also shared her research in journal articles. Lecturer-Teaching 1 reported that,

I also share things related to research. Informally. For example, I share, who will be the leader, I also share new idea, what sort of topic we are going to analyse... I share it (research) through journals, or Mailing list...

Lecturer-Teaching 2 shared knowledge related to research methods by collaborating with her colleagues. During collaboration, she and her colleagues conducted informal discussions relating to the topic of research. She advised, "For sharing on the topic related to research method, we do collaboration. So we do the research together. There is the head of the research and the team members. So we do discussions. Just informal discussion..."

Dedication to community

Lecturer-Teaching 2 and her team gave clothing-branding training to the community as part of her dedication to community, especially for teachers. She collaborated with her colleagues to conduct the community service. Lecturer-Teaching 2 noted that,

For community service, well, I am just a junior here. So this year is my first chance to be the leaders for my community service team. Before, I was just

one of the members. So we gave training to community. Home industry. Clothing branding. To the teachers actually. We showed them how to do it. So we are collaborating for conducting the dedication to community.

Professional Development Programs: PDP reports, materials, results

PDP reports

The members of the Lecturer-Teaching group shared PDP reports with the Director. She welcomed her colleagues if they wished to borrow her report. The report itself was stored in a special room in the Filing Department. She explained that,

After the training, we must submit a written report to Director or Director's Assistant...But so far, the documents of PDP report are submitted and stored at a filing department, in building F. so I fill in the form, then the document will be stored in that department. Members in this institution can borrow that but they have to follow a certain procedure. It is protection for the document because we need the document for accreditation or grant for example. But, not very often do members borrow the PDP report from the filing department. But I share it if my colleagues ask for it...

Lecturer-Teaching 2 shared her PDP report amongst her colleagues and colleagues in other groups of expertise. She stated, "Related to Professional Development Programs. Like few weeks ago, I attended a competency training. Then, after attending the training, back here in (RS3) we share the PDP report. Among group (of expertise) as well because we do that."

PDP material

Lecturer-Teaching 2 shared PDP material as well with her colleagues. She commented that, "...The material from a PDP I had attended is also shared."

PDP results (Key points)

Lecturers-Teaching shared PDP key points with their colleagues. Lecturer-Teaching 1 shared the key points or results from the PDP she had attended formally. She mentioned that, "I share the result or material from the training to my friends formally, because every year we have like induction for new lecturers, I share in that event." Meanwhile, Lecturer-Teaching 2 shared key points with her colleagues in the form of small discussions about the PDP she had attended informally. She recalled that,

After attending a PDP I share the PDP key points. Such as some key points from DIKTI. I also share the PDP material. Among lecturers who also join the training, I share ideas in small discussion. Just informal discussion. Small discussion...

Academic affairs

Lecturers-Teaching shared knowledge in the area of academic affairs. Lecturer-Teaching 1 shared her thoughts in discussions pertaining to the new curriculum. She recounted that, “we also discuss maybe about new curriculum.” Different topics were discussed by Lecturer-Teaching 2 regarding academic affairs. She discussed the format and content of questions for the students’ final tests and training for the curriculum formally with her colleagues. Lecturer-Teaching 2 remarked that,

We discussed about the questions for final test. Because one subject is taught by more than one lecturers, so we must discuss what questions we would like to set for the final examination. For students...We may also set a formal meeting for sharing. Such as a training for curriculum. But it is the head of curriculum division who invite our colleagues.

Student issues

Lecturer-Teaching 1 shared her ideas on student problems or student marks formally in department meetings. She said that, “In the department, the formal meeting, usually mid semester and the end of semester. In those meeting, the discussion is usually about students who have problem, with their marks.” She also informally discussed disruptive students with her colleagues. Lecturer-Teaching 1 added that, “We also discuss the disruptive students, for example, which students that we must be aware of. Just informally.” Lecturer-Teaching 2 shared her experiences related to student problems as a consequence of her colleagues sharing their student concerns first. She noted that, “If my colleagues share their experiences such as related to their problem with students, I share back too. We share to each other.”

Document sharing

Lecturer-Teaching 1 shared data by uploading it to the RS3’s website. She reported that, “In (RS3’s) website I mean. I will just upload the document and they just click on it. I think they will like it better that way.”

Expertise

Lecturer-Teaching 1 shared her expertise in English with her colleagues who were also English lecturers. The discussion took place informally. She advised that,

Related to my expertise as an English lecturer, I communicate informally with my friends, English lecturers as well. Just an informal communication...In informal discussion, the topic can be about expertise, for me is language.

Current affairs

Current affairs was another area of knowledge which Lecturer-Teaching 1 shared with her colleagues. The topic could be about their own children, family or others. She noted, "Well, sometimes we discuss our children, informally. With female lecturers. Just sharing. One discusses something and the rest join in the discussion."

Administrative material

Lecturer-Teaching 2 shared knowledge relating to administrative material. She stated, "Then we share information related to how to fill up the activity control form. Administrative material..."

Classroom management

In the classroom management area of knowledge, Lecturer-Teaching 2 shared her issues during the teaching learning process in the classroom. She discussed students who were a bit difficult to handle. She mentioned that, "I share knowledge in classroom management, such as when I have issue during teaching learning process in the classroom. About students too, such as why this student is a bit difficult. What should we do with him? Something like that."

Appendix K

TYPES OF KNOWLEDGE SHARED

K.1. Research Site 1

K.1.1. Top Managements Participants (Top Managers)

The types of knowledge shared by Top Managers at RS1, which focused on important aspects of teaching, research, and dedication to the community, could be in the form of tacit or explicit knowledge. The types of knowledge shared are discussed below and illustrated in Table B.1. and will lead to the discussion of knowledge creation, to investigate whether knowledge is created at RS1.

Table K.1.

Types of knowledge shared by Top Managers at R22

Types of knowledge	Categories	Knowledge shared	
Tacit	Individual Semantic	Teaching material	
		Research methods	
		Culture and religion (dedication to community)	
	Individual declarative	Informal topics	
		PDP information	
		PDP results/key points	
	Individual Episodic	Research methods	
		Collective Semantic	Research methods
		Collective Episodic	Management-topic discussions
		Collective Declarative	Policies and regulation
Explicit	Individual Semantic	Expertise-related documents (teaching material)	
		Research method	
	Individual Declarative	PDP information	
		PDP reports	
	Individual Episodic	Research methods	
		Teaching material	
	Collective Semantic	Teaching material	
		Research methods	
	Collective Declarative	Summary of meetings	
		Policies and regulations	
	Collective Episodic	Research methods	
		Collective Periodic	

As the table indicates, knowledge is divided into tacit knowledge when it is shared through discussion or explicit when the Director or The First Director Assistant shared knowledge in the form of documents or files. Types of knowledge shared also include individual knowledge which refers to knowledge which was attained through personal experience and was shaped by a person's personal beliefs and assumptions. For example, when knowledge is shared after attending a PDP or

shared PDP information. Another type of knowledge shared was also collective knowledge which was that created amongst individuals. For example, when the Director and The First Director Assistant shared teaching modules (teaching material). Top Managers at RS1 shared teaching modules as one subject was taught by more than one lecturer. They discussed what the material would be and sometimes each of them shared their own modules (references) with the group in order to create new ones. Discussions of research methods could also be personal or group ideas (academic group). Top Managers shared their own research projects or feedback. However, they also shared new ideas for new research that they discussed in the academic forum in each department.

The knowledge that Top Management participants at RS1 shared did not have to be semantic or episodic (deep knowledge) such as teaching materials or research methods which need a deep understanding of the concepts and the relationship of the points. The knowledge shared could also be declarative where the knowledge was just for information, such as when the First Director's Assistant shared a summary of a meeting or PDP information after they attended a Professional Development Programs.

K.1.2.Middle Management Participants (Middle Managers)

As with the senior leadership knowledge sharing, the Middle Managers' data has also been categorised according to knowledge type. From the explanation on areas of knowledge shared earlier, it can be concluded that Middle Managers shared individual and collective tacit or/and explicit knowledge. The tacit-individual knowledge could be semantic, such as training results, expertise, feedback, research methods, and reviews of research or declarative and Professional Development Program information. The knowledge could also be episodic such as experiences, problems, or information related to dedication to the community. The areas of tacit-collective knowledge were management-related discussions, research methods, classroom management, problems, and knowledge shared with the community

For explicit knowledge, individual knowledge could be declarative such as forwarded-information, PDP information, and documents of meeting summaries, PDP handouts and modules or semantic material such as teaching material. The collective tacit knowledge may be that related to conducting research, dedication to a community project (design), and machine design. For explicit knowledge which is collective, knowledge could be semantic such as teaching material, theses, scientific journals, PDP reports, and site vision. Meanwhile, declarative knowledge includes

teaching schedules. Explicit collective knowledge shared by Middle Managers may be knowledge related to conducting research, PDP proposals, dedication to community, machine design, administrative documents, and reviews of research (in review form).

Table K.2.

Types of Knowledge Shared by Middle Management at RS1

Types of knowledge shared	Category	Knowledge shared	
Tacit	Individual Semantic	Training results	
		Expertise	
		Feedback	
		Research methods	
			Review of research (in review form)
	Individual Declarative	Information	
		PDP information	
	Individual Episodic	Experience	
		Problems	
		Dedication to the community	
	Collective Semantic	Teaching material	
	Collective Periodic		
	Collective Episodic	Management related discussions	
		Research methods	
Classroom management			
Problems			
		Dedication to the community-know how	
Explicit	Individual Declarative	Forward information	
		PDP information	
		Documentation of meeting minutes	
		PDP handouts and modules	
		PDP reports	
	Individual Semantic	Teaching material	
	Individual Episodic	Research methods	
		Dedication to community project (design)	
		Machine design	
	Individual Periodic		
	Collective Semantic	Teaching material	
		Thesis	
		Scientific journals	
		Site Vision	
	Collective Declarative	Teaching process schedules	
	Collective Episodic	Research methods	
		PDP proposals	
		Dedication to the community project (design)	
		Machine design	
Administrative documents			
Review of research (in review form)			

For tacit knowledge, most Middle Management participants share individual semantic, episodic, and collective episodic knowledge. None of them share collective periodic. For explicit knowledge, most knowledge shared is individual declarative and episodic. For collective explicit, most knowledge shared is collective semantic and episodic with collective episodic knowledge as the majority type of knowledge shared for explicit knowledge. Middle Management do not share individual episodic and collective periodic types of knowledge.

K.1. 3. Participants who are Active in Unit (Lecturer-Unit participants)

Table K.3.

Types of knowledge shared by Lecturer-Unit participants at RS1

Types of knowledge	Category	Knowledge shared
Tacit	Individual semantic	Consultation on research methods
		PDP key points
		Unit's service
		Teaching techniques
	Individual Declarative	Informal topics (current affairs)
	Collective Semantic	Training (dedication to community)
Explicit	Individual semantic	Teaching material
		Journal
		Teaching techniques
	Individual declarative	PDP reports
		PDP material
	Individual episodic	Research methods (journals)
		Teaching techniques

Most Lecturer-Unit participants at RS1 shared tacit knowledge such as individual semantic, individual declarative, and collective semantic knowledge. For explicit knowledge, most knowledge shared is individual knowledge such as individual semantic, declarative, and episodic knowledge.

K.1.4. Lecturer-Teaching participants

Table K.4.

Types of knowledge shared by Lecturer-Teaching participants at RS1

Types of knowledge	Category	Knowledge shared
Tacit	Individual semantic	Teaching material
		Research methods
		Dedication to Community
		Teaching techniques
		Academic affairs
		Student issues
		Expertise
	Individual Declarative	Informal topics (current affairs)
	Individual Episodic	PDP information
		PDP key points
	Collective Semantic	Dedication to community
		Research methods
Explicit	Individual semantic	Teaching material
		Journal
		Academic affairs
	Individual declarative	PDP reports
	Individual episodic	Research methods (journals)
Teaching techniques		

Most Lecturer-Teaching participants shared tacit knowledge such as individual semantic, individual declarative, individual episodic and collective semantic knowledge. For explicit knowledge, Lecturer-Teaching participants mostly shared individual knowledge such as individual semantic, declarative, and episodic knowledge.

K.2. Research Site 2

K.2.1. Top Managements Participants (Top Managers)

Top Managers shared both tacit and explicit knowledge which was either individual or collective. The knowledge might come from their personal experience or from collaboration or might need collaboration with others, such as in the creation of research methods or teaching materials. Both shared semantic-tacit and explicit knowledge. The only declarative knowledge that they indicated they shared was in the form of forwarded emails. Top Managers shared their episodic

knowledge but none of them shared tacit-individual or tacit collective procedural knowledge. However, related to their job as Top Managers, they shared explicit-collective procedural knowledge, such as through circulating policies or regulations. For tacit knowledge, they shared more individual knowledge than collective knowledge. Collective knowledge shared included teaching materials and knowledge in management (see Table K.5).

Table K.5.

Types of knowledge shared by Top Managers at RS2

Types of knowledge	Categories	Knowledge shared
Tacit	Individual Semantic	Ideas
		PDP results
		Teaching materials
		Religious topics
	Individual Episodic	Experience
		Classroom management
		Reviews on research results
		Tips/recommendations/professional feedback
	Collective Semantic	Teaching materials
	Collective Episodic	Management
Explicit	Individual Semantic	PDP results/materials
		PDP reports
	Individual Declarative	Emails
	Individual Periodic	
	Individual Episodic	Proposal reviews
		Research proposals
	Collective Semantic	Teaching materials
	Collective Episodic	PDP results/materials
		Research proposals
	Collective Periodic	Policies, regulations

Top Managers shared tacit individual semantic knowledge when they shared ideas, teaching materials, PDP results, or religion as is shown in Table K.5. An example of sharing tacit collective semantic knowledge was when they shared

teaching materials. They discussed teaching materials which might create new teaching materials.

K.2.2.Middle Management Participants (Middle Managers)

Middle Managers shared tacit and explicit knowledge both individually and collectively. The categories of knowledge might be semantic or episodic as the knowledge contained complicated relationships or processes such as teaching materials, the unit's services, expertise, management, dedication to the community, or teaching techniques. Types of knowledge shared were also related to their positions as Middle Managers. Middle Managers generally shared similar types of knowledge. However, the knowledge or topics might be different. Table K.6. describes the types of knowledge shared by Middle Managers at RS2.

Table K.6.

Types of knowledge shared by Middle Managers at RS2

Types of knowledge	The category	The knowledge shared
Tacit	Individual Semantic	Teaching material
		Unit's service
		PDP reports
		PDP results
		Student issues and problem
		Expertise
		Policy
		Management
	Individual Episodic	Dedication to community
		PDP reports
		Teaching techniques
	Collective Semantic	Teaching material
		Unit's service
		PDP results
		Student issues and problem
Collective Declarative	Dedication to community	
Collective Episodic	Administrative affairs	
	Dedication to community	
	Management	
	Student problem	
Explicit	Individual Semantic	Teaching material
		Unit's service
		Expertise
	Individual Episodic	Dedication to community
		Expertise
	Collective Semantic	Teaching material
	Collective Declarative	Administrative affair
	Collective Episodic	Dedication to community
Collective Periodic	Policies	

K.2. 3. Participants who are active in Unit (Lecturer-Unit participants)

The Lecturers-Unit group shared tacit and explicit knowledge, which could be individual or collective. They shared semantic, episodic, and declarative knowledge. Procedural knowledge, which could be a manual or the explanation or discussion about the manual, was not shared. The episodic knowledge, which needed further understanding and was a more complicated process, was shared by the members of the Lecturers-Unit group such as learning techniques, research methods, or classroom management. Semantic knowledge, such as teaching material, expertise, PDP key points and material were shared with colleagues in the institution. In other words, being in the Lecturers-Unit group helped them to share with broader participants. The types of knowledge shared by Lecturers-Unit at RS2 are described in Table K.7.

Table K.7.

Types of Knowledge Shared by Lecturer-Unit Participants at RS2

Types of knowledge	Category	Knowledge shared by Lecturer-Unit participants at RS2
Tacit	Individual Semantic	Teaching material
		Research methods
		PDP key points/results
		Religion
		Expertise
		Student issues
		PDP material
	Individual Declarative	PDP information
		Social/political issues
		Links to website
	Individual Episodic	Expertise
		Learning techniques
		Classroom management
		Unit service
		Proposal discussion
Learning techniques Classroom management		
Individual. Periodic		
Collective. Semantic	Teaching material	
Collective Declarative		
Collective Episodic	Dedication to community	
Collective Periodic		
Explicit	Individual Semantic	Teaching material
		Research methods
		PDP reports
		PDP material
		PDP key points/result
	Individual Declarative	Student issues
		PDP information
		Religion
		Softcopy/email
	Individual Episodic	Research methods
	Individual Periodic	

Types of knowledge	Category	Knowledge shared by Lecturer-Unit participants at RS2
	Collective Semantic	Teaching material
		Research methods
	Collective Declarative	Unit data
	Collective Episodic	
	Collective Periodic	

Table K.7. demonstrates that Lecturers-Unit at RS2 shared more individual knowledge both tacit and explicit types. Both tacit and explicit individual semantic knowledge such as teaching materials, research methods, PDP, religion, expertise, unit service, and student issues were shared. They did not share individual and collective periodic knowledge.

K.2.4. Lecturer-Teaching participants

Lecturer-Teaching participants shared tacit and explicit knowledge both individual and collective. Most of the knowledge shared was semantic and episodic knowledge. The knowledge they shared was through a process such as teaching material where they collaborated to produce material or discuss it. Lecturer-Teaching 1 exchanged teaching material. Both Lecturer-Teaching participants shared knowledge such as previous collaborative research with other colleagues. When they shared knowledge of classroom management, they shared it through informal discussion only.

The table below describes the types of knowledge shared by Lecturers-Teaching at RS2. Column 1 presents the types of knowledge shared which can be tacit or explicit. Column 2 describes the categories of the types of knowledge shared which can be individual or collective. The last column shows the knowledge shared by Lecturer-Teaching at RS2.

Table K.8.

Types of Knowledge Shared by Middle Management at RS2

Types of knowledge	The category	The knowledge shared
Tacit	Individual Semantic	Teaching material
		Classroom condition
		PDP results
		Student behaviour
		Expertise
	Individual Declarative	
	Individual Episodic	Dedication to community
	Individual Periodic	
	Collective Semantic	Teaching material
		Research
		PDP key points
		Student issues and problems
		Dedication to community
	Collective Declarative	
	Collective Episodic	Dedication to community
	Management	
	Student behaviour	
Collective Periodic		
Explicit	Individual Semantic	Teaching material
		Research
		Expertise
	Individual Declarative	
	Individual Episodic	Dedication to community
		Expertise
	Individual Periodic	
	Collective Semantic	Teaching material
	Collective Declarative	
Collective Episodic	Dedication to community	
Collective Periodic		

K.3. Research Site 3**K.3.1. Top Managements Participants (Top Managers)**

The members of the Top Management group at RS3 shared tacit and explicit knowledge, which can be individual or collective, since the knowledge came from their personal experience or from collaborating with others, including involving themselves in department meetings or activities. Top Managers shared individual semantic tacit and explicit knowledge such as PDP key points, recommendations, feedback, advice, “participation”, policy, administrative issues, PDP reports and reports from the First Director’s Assistant to the Director. They shared declarative individual tacit and explicit knowledge and they also shared individual and collective tacit knowledge with colleagues. Table 7.2 demonstrates the types of knowledge shared by Top Management participants at RS3.

Table K.9.

Types of Knowledge Shared by Top Managers at RS3

Types of knowledge	Categories	The knowledge shared
	Individual Semantic	PDP results or information
		Recommendation/feedback/advice
		Participation
		Policy
	Administrative issues	
	Individual Episodic	Administrative issues
	Individual Declarative	PDP information
	Individual Periodic	
	Collective Semantic	
	Collective Episodic	Participation
Collective Declarative		
Collective Periodic		
Explicit	Individual Semantic	PDP results or information
		PDP reports
		Reports
	Individual Episodic	
	Individual Declarative	PDP material/disposition
	Individual Periodic	
	Collective Semantic	
	Collective Episodic	
Collective Declarative	Information through email	
Collective Periodic	Policy	

Top Managers shared tacit individual declarative knowledge when they shared PDP information and they shared explicit declarative knowledge when the Director shared the PDP material through disposition mechanisms as shown in Table K.9.

K.3.2. Middle Management Participants (Middle Managers)

Both Middle Managers in RS3 shared individual and collective tacit and explicit knowledge. They shared tacit individual semantic material, such as teaching materials, research methods, PDP key points/results, and academic affairs; declarative material such as PDP information; episodic material such as teaching material, research methods, academic affairs; and collective semantic information such as teaching material, and research methods; and periodic types of knowledge such as academic affairs (syllabus). Table K.10. describes the types of knowledge shared by Middle Management participants at RS3.

Table K.10.

Types of Knowledge Shared by Middle Managers at RS3

Types of knowledge	The category	The knowledge shared
Tacit	Individual Semantic	Teaching material
		Research methods
		PDP key points/result
		Academic affairs
		Current affairs (at <i>arisan</i>)
		Management
		Expertise
	Individual Declarative	PDP information
	Individual Episodic	Teaching material
		Research methods
		Academic affairs
	Individual Periodic	
	Collective Semantic	Teaching material
		Research methods
Collective Declarative		
Collective Episodic	Teaching material	
	Research methods	
	Academic affairs	
Collective Periodic	Academic affairs (the syllabus)	
Explicit	Individual Semantic	Teaching material
		PDP reports
		PDP material
		Academic affairs
		Information to stakeholders
	Individual Declarative	PDP information
	Individual Episodic	Research methods
	Individual Periodic	
	Collective Semantic	Teaching material
		Institutional data
	Collective Declarative	
Collective Episodic	Academic affairs	
Collective Periodic	Academic affairs (Syllabus)	

Table K.10. shows that both Middle Managers do not share knowledge, which is tacit and explicit, individual or periodic. However, they shared tacit and explicit collective periodic material, such as academic affairs (syllabus). They also did not share knowledge that is tacit and explicit, collective or declarative.

K.3. 3. Participants who are Active in Unit (Lecturer-Unit Participants)

Lecturer-Unit participants at RS3 shared tacit and explicit knowledge, which was either individual or collective, as the knowledge might have come from their personal experience or from collaborating, or might require collaboration with others (collective), such as the knowledge related to teaching materials, research methods and dedication to community. Lecturer-Unit participants shared tacit

individual semantic, episodic, and declarative knowledge such as PDP information, feedback in a formal meeting, student issues, current affairs and they also shared tacit collective episodic information. For explicit knowledge, Lecturer-Unit participants at RS3 shared explicit individual semantic, declarative, periodic and episodic types of knowledge. Meanwhile, for explicit collective types of knowledge, participants shared episodic and periodic types of knowledge such as teaching material (collective episodic) and administrative documents (explicit collective periodic). Table K.11. explains the types of knowledge shared by the members of Lecturer-Unit group at RS3.

Table K.11.

Types of Knowledge Shared by Lecturer-Unit participants at RS3

Types of knowledge	Categories	The knowledge shared
Tacit	Individual Semantic	Teaching material
		Research methods
		PDP key points
		Classroom management
		Academic affairs
	Individual Episodic	Expertise
		Research methods
		Dedication to Community
	Individual Declarative	
		PDP information
		Feedback in a formal meeting
		Student issues
	Individual Periodic	Current affairs
Collective Semantic		
Collective Episodic	Teaching material	
	Research methods	
	Dedication to Community	
Explicit	Individual Semantic	Teaching material
		PDP reports
	Individual Declarative	Books
	Individual Periodic	Administrative Documents
	Individual Episodic	Teaching material
		PDP reports
		PDP material
	Collective Semantic	
Collective Episodic	Teaching material	
Collective Periodic	Administrative Documents (SOP)	

The findings describe that both Lecturer-Unit participants at RS3 did not share tacit individual periodic and tacit collective semantic, declarative, and episodic knowledge. For explicit knowledge, Lecturer-Unit participants did not share collective semantic and declarative types of knowledge.

K.3.4. Lecturer-Teaching participants

The members of the Lecturer-Teaching group at RS3 shared tacit and explicit knowledge both individual and collective. The knowledge might be semantic, declarative, episodic, or procedural, as the knowledge contained complicated relationships, processes, or involved action such as teaching materials, research methods, and dedication to community. The knowledge involved individual and collective knowledge, when they share knowledge in the area of *Tridharma*. The knowledge shared could be individual and collective as the sharing involved collaboration with other colleagues. Therefore, individual and group knowledge was shared. Individual explicit declarative knowledge could be PDP material and the data which was uploaded to the RS3 website. Table K.12. explains the types of knowledge shared by Lecturer-Teaching participants at RS3.

Table K.12.

Types of Knowledge Shared by Lecturer-Teaching Participants at RS3

Types of knowledge	The category	The knowledge shared
Tacit	Individual Semantic	Teaching material
		Research methods
		Dedication to community
		PDP reports
		PDP key points
		Academic affairs
		Student issues
		Classroom management
	Individual Declarative	Current affairs
	Individual Episodic	Teaching material
		Research methods
		Dedication to community
		PDP reports
	Individual procedural	Teaching material
		Research methods
		Dedication to community
	PDP reports	
Collective Semantic	Teaching material	
Collective Declarative		
Collective Episodic	Research methods	
Collective procedural		
Explicit	Individual Semantic	Teaching material
		Research methods
		PDP reports
		Document/data uploaded
	Individual Declarative	PDP material
		Administrative material
	Individual Episodic	PDP reports
	Individual Procedural	
	Collective Semantic	Research methods
Collective Declarative		

Types of knowledge	The category	The knowledge shared
	Collective Episodic	
	Collective Procedural	Dedication to community

Appendix L

HOW KNOWLEDGE IS CREATED AT STATE POLYTECNICS IN INDONESIA

L.1. Research Site 1

L.1.1. Top Managements Participants (Top Managers)

The knowledge created by Top Management at RS1 was through socialisation, externalisation, combination, and internalisation. For example, sharing teaching material was tacit, as it was shared informally; thus, it was created through socialisation. The knowledge generated during the process of designing teaching materials was created through a combination of processes as participants also shared hardcopies of their books/references to design new materials. The Academic Forum, on the other hand, focused on knowledge sharing designed to improve their research proposals; thus, knowledge was created through externalisation. Internalisation took place when The First Director's Assistant explained new policies and regulations and how they applied these to their daily operation.

Table L.1. describes how knowledge was created by Top Management at RS1. Column 1 shows the category of participants who are Top Management participants. Columns 2 and 3 describe the area of knowledge and what knowledge is shared. Column 4 explains how the new knowledge was created as the result of the knowledge shared, which could be tacitly or explicitly. The process of knowledge creation could be through socialisation, externalisation, combination, or internalisation .

Table L.1.

How Knowledge is Created by Top Management at RS1

Participants	Area of Knowledge	What is shared	How Knowledge is Created			
			Socialisation	Externalisation	Combination	Internalisation
Top Management	Tridharma (three dedications)	Teaching material	√	√	√	√
		Research	√	√	√	
	Dedication to Community	√			√	
	PDP	Reports		√	√	
		Results	√			√
		Information about scholarships			√	

	Management	Organisational strategies and development	√			√
		Institutional life and direction	√			√
	Circulate and/or socialise policies and/or regulations				√	√
	Summary of informal meetings		√	√		

Table L.1. reveals that most of the knowledge created by Top Managers at RS1 was through socialisation. The managers' culture which suggested the importance of face-to-face interaction influenced this process. Meanwhile, externalisation was the least popular process of knowledge creation.

L.1.2. Middle Management Participants (Middle Managers)

Knowledge is created at RS1 through socialisation, externalisation, internalisation, and combination . The previous discussion shows that knowledge creation does happen through knowledge sharing by Middle Management. During the sharing of knowledge related to *Tridharma*, knowledge is created through SECI. The teaching material is shared through discussion in the expertise group where members may also teach similar subjects in each department (KBK group). They discuss the teaching material and also design new handouts or modules for teaching (externalisation). Meanwhile, when they share knowledge in management, they create knowledge through socialisation and internalisation as they also discuss the budget. The details of knowledge creation conducted by Middle Managers is described below:

Table L.2.

How Knowledge is Created by Middle Managers at RS1

Participants	Area of Knowledge	What is shared	How Knowledge is created			
			Socialisation	Externalisation	Combination	Internalisation
Top Management	<i>Tridarma</i>	Teaching material	√	√	√	√
		Conducting research	√	√	√	√

Participants	Area of Knowledge	What is shared	How Knowledge is created			
			Socialisation	Externalisation	Combination	Internalisation
Top Management		Dedication to community	√	√		√
	PDP	Reports			√	
		Material	√	√		
		Information			√	
		Results		√		
	Expertise, design		√	√		√
	Pass on/forward information or articles from a colleagues				√	
	Information on administrative issues	Calendar/time tables			√	
		Vision			√	
		Staff administrative information			√	
		Meeting minutes		√		
		Information from DIKTI (government)			√	
	Management	Information on department development	√			
		Management	√			√
		How to manage a department	√			
	Feedback after a formal meeting		√			
	Social issues		√			

Knowledge is created mostly through socialisation. MM3 suggested that culture influences the knowledge creation process. He stated that, "The topic can be anything actually. Besides, it is part of the culture. It is just a habit. Brought from where I come from.... well, it is culture. Face-to-face interaction naturally happens." Besides culture, the opportunity to meet each other at the workplace also contributes to the process of creation. Employees often meet at the office where they start talking and this may end up in a discussion. MM5 expressed his view as follows,

We luckily have many opportunities to share...But we have more opportunity when we have a lunch break for example. I share my ideas about

what we should do...well, we have many opportunities for the informal meeting like that...We discuss more when, for example, after work, we meet colleagues, then we chat. We end up with discussion. It is unplanned...

L.1.3. Participants who are active in Unit (Lecturer-Unit participants)

Table L.3. How Knowledge was Created by Lecturer-Unit Participants at RS1

Participants	Area of Knowledge	What is shared	How Knowledge is Created			
			Socialisation	Externalisation	Combination	Internalisation
Top Management						
	Tridharma (three dedications)	Teaching material	√		√	√
		Research	√		√	
		Dedication to Community	√	√		√
	PDP	Reports			√	
		Results/key points	√			√
		Material			√	
	Informal topics		√			
	Unit's service		√		√	√
	Expertise		√		√	√
	Teaching techniques		√		√	√

Most knowledge is created through socialisation. The sharing of knowledge took place through discussion when they met their colleagues. The Lecturer-Unit participants also shared documents. Therefore, the knowledge was also created through combination.

L.1.4. Lecturer-Teaching Participants

Table L.4.

How knowledge was Created by Lecturer-Teaching Participants at RS1

Participants	Area of Knowledge	What is shared	How Knowledge is Created			
			Socialisation	Externalisation	Combination	Internalisation
Top Management						
	Tridharma (three dedications)	Teaching material	√		√	√
		Research	√		√	√
		Dedication to Community	√	√		√
	PDP	Reports			√	
		Results/key points	√			√

		Information	√			
	Informal topic/current affairs		√			
	Student issues		√			
	Expertise		√		√	√
	Academic affairs		√		√	√

Most knowledge was created through socialisation as they shared knowledge mostly through face-to-face discussions. The knowledge in the organisation created by Lecturer-Teaching participants was the least created through combination.

L.2. Research Site 2

L.2.1. Top Managements Participants (Top Managers)

Top Managers at RS2 shared knowledge through socialisation, externalisation, combination, and internalisation. For example, teaching materials were shared through socialisation in informal discussions with colleagues who had similar expertise. The teaching material was also shared in a group (internalisation) or by sharing hard copies for the purpose of designing new teaching materials (combination). Regarding the Professional Development Programs, knowledge was shared through socialisation, externalisation, combination and internalisation as well. It was shared through informal discussions in a group. Tips, recommendations, feedback, or suggestions were shared through socialisation or internalisation while religion was shared only through socialisation. Table L.5. depicts how knowledge is created at RS 2 by Top Managers.

Table L.5.

How Knowledge is Created by Top Managers

Area of Knowledge	What is shared	How Knowledge is Created			
		Socialisation	Externalisation	Combination	Internalisation
Tridharma	Teaching material	√		√	√
	Knowledge related to research methods	√	√		√
PDP	Reports		√	√	
	Material	√		√	√

Area of Knowledge	What is shared	How Knowledge is Created			
		Socialisation	Externalisation	Combination	Internalisation
	Results/key points/ summary/ experience discussion	√		√	
Management	Sub-management evaluation	√			
	Weakness evaluation	√			√
	Corrective issues	√			
Religion		√			
Classroom management		√			
Sharing documents with DIKTI/ files to House of Representatives			√	√	
Policy			√	√	√
Administrative issues		√			

Table L.5. shows that new knowledge is created mainly through socialisation. The culture related to senior-junior relationships affects the process most significantly. The First Director's Assistant referred to this culture, "Because we can interact with recipients directly...this is our habit of communication. For my age, maybe face to face is the most common communication...but in informal meetings there is equality." The First Director's Assistant also referred to the tradition in this province for informal socialisation which is called "*kongkow*."⁷ He said, "the informal one, well, we actually call it '*kongkow*'. No schedule for that. When we meet, for example at break time, no teaching schedule, then we start chatting. It can turn into a serious discussion" The knowledge was least created by Top Managers at RS2 through externalisation. For example, when managers submit PDP reports or information to the government (DPR) as the result of their discussion

L.2.2. Middle Management Participants (Middle Managers)

The knowledge created by Middle Managers at RS2 is through socialisation, externalisation, combination, and internalisation. For example, the knowledge shared about teaching material is tacit, was shared informally, and is created

⁷ *Kongkow* in this province means an informal gathering where the situation is relaxed and there is no boss or sub-ordinate levels. All are in an equal position and usually there will be coffee or tea served and snacks.

through socialisation. It was also created through combination while the sharing of teaching materials takes place. The sharing of knowledge through reporting created knowledge through combination while sharing knowledge of administrative affairs created knowledge through internalisation. Externalisation took place when Middle Managers shared knowledge of their expertise. Table B.18. explains how knowledge is created by Middle Managers at RS2.

Table L.6.

How Knowledge is Created by Middle Managers

Area of knowledge	What is shared	How Knowledge is created			
		Socialisation	Externalisation	Combination	Internalisation
Tridharma	Teaching material	√		√	√
	Dedication to community	√			√
PDP	Reports			√	
	Results/key points/summary/experience discussion	√			√
	Information	√			
Management	The development of a program	√			
	Unit management	√			
	Institution	√			
Policy		√			√
Report				√	
Expertise		√	√		√
Student issues and problems		√	√		
Unit's service	Unit's product	√			√
	Business affairs	√			√
	Information about products	√			√
Teaching techniques			√	√	√
Administrative affairs					√

Table L.6. indicates that the knowledge created by Middle Managers at RS2 is mostly through socialisation. The Head of the Entrepreneurship Unit explained, "It is important, when we chat or communicate or interact with others, we see as our counterparts. We know his condition. Therefore, we can understand better. We also know if our counterpart understands what we say." Meanwhile, the least effective process of knowledge creation by Middle Managers was externalisation.

L.2. 3. Participants who are active in Unit (Lecturer-Unit participants)

The knowledge created by lecturers who are active in their unit was through socialisation, externalisation, combination, and internalisation. When they shared knowledge related to teaching material, they created knowledge through combination. They exchanged teaching modules, books, PowerPoints, and other materials. The creation of knowledge through externalisation occurred when Lecturer-Unit 1 shared her expertise in designing a budget plan with her supervisor. The knowledge created through socialisation took place when they discussed social or politics issues. Meanwhile, they created knowledge through internalisation when they shared knowledge related to the results or the key points of the PDP they had attended. They shared the knowledge through a formal mechanism. Table L.7. explains how knowledge is created by lecturers who are active in their unit at RS2.

Table L.7.

How Knowledge is Created by Lecturer-Unit Group at RS2

Area of Knowledge	What is shared	How Knowledge is Created			
		Socialisation	Externalisation	Combination	Internalisation
Tridharma	Teaching material	√		√	√
	Research methods	√		√	
	Dedication to community	√	√		√
PDP	Reports		√	√	
	Material			√	
	Results/key points/ summary/ experience discussion	√	√		√
	Information			√	
Proposals				√	
Religion		√		√	
Learning techniques		√	√		
Expertise		√	√	√	√
Classroom management		√			
Unit's data		√	√	√	
Student issues		√		√	
Social politics		√			
Links to website					√

From Table L.7., it can be concluded that the knowledge created by the Lecturers-Unit at RS2 was mostly through socialisation. Comparing these processes, it would appear that the knowledge least shared was through internalisation.

L.2.4. Lecturer-Teaching participants

The presentation above shows that knowledge is created through socialisation, externalisation, combination and internalisation. The sharing of teaching material is an example. The Lecturers-Teaching at RS2 share teaching material through informal discussions and also exchange teaching material in hardcopy or through email. Therefore, knowledge is created through socialisation and combination. Meanwhile, the sharing of the results of Professional Development Programs such as training creates the knowledge through socialisation only. Lecturer-Teaching 2 only shares the key points of a PDP through discussion.

The table below demonstrates how knowledge is created by Lecturers-Teaching.

Table L.8.

How Knowledge is Created by Lecturers-Teaching at RS2

Participants	Area of Knowledge	What is shared	How knowledge is created			
			Socialisation	Externalisation	Combination	Internalisation
Lecturer-Teaching						
	Tridarma (three dedications)	Teaching material	√		√	
		Conducting research	√		√	
		Dedication to community	√			
	PDP	Results/key points	√			
	Classroom management	Student behaviour	√			
		Classroom conditions	√			
	Expertise		√			

The table above demonstrates that the knowledge created by Lecturer-Teaching participants at RS2 was mostly through socialisation. The advantage of face to face interaction affected the process of knowledge creation as was claimed by Lecturer-Teaching 2. She said, "Face to face interaction is better because it is two-

way discussion. The interaction is real.” None of the Lecturer-Teaching participants shared knowledge which was created through externalisation and internalisation.

L.3. Research Site 3

L.3.1. Top Managements Participants (Top Managers)

Top Managers created knowledge through socialisation, externalisation, combination, and internalisation. PDP information was shared through internalisation as the Director shared the information in a meeting. The sharing of key points from PDPs created knowledge through socialisation, externalisation, and internalisation. The sharing of colleagues’ reports on PDPs through disposition created knowledge through Combination. The Top Managers gave recommendations, feedback or advice informally, or formally in an official meeting (such as giving recommendations to DIKTI), which created knowledge through socialisation. Meanwhile the information which was shared through a mailing list with members created knowledge through Combination and internalisation. Table L.9. portrays how the members of the Top Management group at RS3 created the knowledge.

Table L.9.

How Knowledge is Created by Top Managers

Area of Knowledge	What is shared	How Knowledge is Created			
		Socialisation	Externalisation	Combination	Internalisation
Professional Development Programs	PDP information				√
	PDP results (key points)	√	√		√
	PDP reports				√
	A colleague’s PDP report			√	
	PDP material	√		√	√
Recommendations /advice/feedback		√			
Participation		√			
Information				√	√
Policy		√			
Administrative issues					√
Reports				√	

Table L.9. above shows that internalisation dominated the knowledge creation by Top Managers at RS3. The Top Managers did not share the knowledge which significantly created knowledge through externalisation.

L.3.2. Middle Management Participants (Middle Managers)

The knowledge created in the institution by Middle Managers at RS3 is through socialisation, externalisation, combination, and internalisation. The knowledge shared on teaching material was tacit and explicit, and they shared the modules with their colleagues, which made the knowledge created in the organisation possible via the combination process. The Middle Managers also shared teaching material with students during the teaching learning process, which created the knowledge through internalisation. For sharing knowledge of Professional Development Programs, knowledge in the organisation was created mainly through combination. They shared the reports from the PDPs they had attended, shared the material, or information related to these programs in hardcopy or softcopy. The information to stakeholders was shared through their website and the knowledge created was through the combination process as well. The sharing of the current affairs area of knowledge, created knowledge in the organisation through socialisation. Moreover, dedication to the community created knowledge in the organisation through externalisation, combination, and internalisation, as groups shared knowledge with the community, provided the generator to the community, and they also individually shared their knowledge with the community.

Table L.10.

How Knowledge is Created by Middle Managers at RS3

Area of knowledge	What is shared	How Knowledge is created			
		Socialisation	Externalisation	Combination	Internalisation
Tridharma	Teaching material			√	√
	Research methods	√			√
	Community service		√	√	√
PDPs	Results/key points	√		√	√
	Reports			√	
	Information	√		√	
	Material			√	
Academic affairs		√	√	√	√
Current affairs		√			
Management		√			
Expertise		√			√
Information to stakeholders				√	

Area of knowledge	What is shared	How Knowledge is created			
		Socialisation	Externalisation	Combination	Internalisation
Institutional data				√	

Table L.10. explains that knowledge created in the institution by Middle Management participants at RS3 is mostly through the Combination processes. The Head of Technical Study Program 1 indicated that they often used IT to share knowledge, “We play with IT a lot.”

L.3. 3. Participants who are Active in a Unit (Lecturer-Unit Participants)

Lecturer-Unit participants at RS3 shared knowledge by creating new knowledge through socialisation, externalisation, combination, and internalisation. The knowledge was created through socialisation when the Lecturer-Unit group shared knowledge in the areas of *Tridharma*, classroom management, academic affairs, expertise, student issues and current affairs. Teaching material was also shared, which created knowledge through externalisation and combination. Like the sharing of research methods, the Lecturer-Unit participants also created knowledge through internalisation when they shared knowledge related to dedication to community, PDP key points/results, feedback, academic affairs, and expertise. They shared knowledge usually in a forum or in a formal meeting. The sharing of knowledge related to teaching material and dedication to the community created knowledge in the organisation through externalisation, as they work in teams to share the knowledge with students, colleagues, or the community. Both Lecturer-Unit participants shared data or documents either in hardcopy or softcopy, which created knowledge in the organisation through combination. Table L.11. demonstrates how knowledge is created by Lecturer-Unit participants at RS3.

Table L.11.

How Knowledge is Created by Lecturer-Unit Participants at RS3

Area of Knowledge	What is shared	How Knowledge is Created			
		Socialisation	Externalisation	Combination	Internalisation
<i>Tridharma</i>	Teaching material	√	√	√	
	Knowledge related to research methods	√		√	√
	Dedication to Community	√	√		√
PDPs	Reports			√	

Area of Knowledge	What is shared	How Knowledge is Created			
		Socialisation	Externalisation	Combination	Internalisation
	Material			√	
	Results/key points	√			√
	Information	√		√	
Classroom management		√			
Feedback					√
Academic affairs		√			√
Expertise		√			√
Administrative documents				√	
Books				√	
Student issues		√			
Current affairs		√			

Table L.11. illustrates that new knowledge is created mainly through socialisation, even though the table also shows that knowledge was created in the organisation significantly through combination. The knowledge in the organisation was not ominously created through externalisation.

L.3.4. Lecturer-Teaching participants

The knowledge created in the organisation by Lecturer-Teaching participants at RS3 is through socialisation, externalisation, combination, and internalisation. For example, the knowledge shared about teaching material is tacit and explicit. It created knowledge through socialisation and combination. As Lecturer-Teaching participants shared knowledge through collaboration, the knowledge was also created through internalisation. The results of their discussion created new teaching material which generated knowledge through externalisation. The sharing of PDP reports, document/data, and administrative material created knowledge in the organisation through combination. Table L.12. explains how knowledge is created by Middle Managers at RS3.

Table L.12.

How Knowledge is Created by Lecturer-Teaching at RS3

Area of knowledge	What is shared	How Knowledge is created			
		Socialisation	Externalisation	Combination	Internalisation
Tridharma	Teaching material	√	√	√	√
	Research methods	√	√	√	√

Area of knowledge	What is shared	How Knowledge is created			
		Socialisation	Externalisation	Combination	Internalisation
	Dedication to community	√	√		√
PDPs	Reports			√	
	Results/key points/	√			
	Material			√	
Academic affairs		√			√
Student issues		√			√
Documents				√	
Expertise		√			
Current affairs		√			
Administrative material				√	
Classroom management		√			

Table L.12. describes that the knowledge created by Lecturer-Teaching participants was mostly through socialisation. Meanwhile, the least process of knowledge creation during knowledge sharing by Lecturer-Teaching participants was externalisation.

Appendix M

PARTICIPANTS' INTRINSIC AND EXTRINSIC MOTIVATIONS TO SHARE KNOWLEDGE

M1. Research Site 1

M.1.1. Top Managers' Intrinsic and Extrinsic Motivations to Share Knowledge

Table M.1.

Top Managers' Intrinsic and Extrinsic Motivations (RS1)

Intrinsic and Extrinsic Motivations to Share knowledge				
Intrinsic	Perceived power of knowledge			To make the knowledge stronger
				If one has knowledge, he has power to change
	Reciprocity	Direct		To get new knowledge
				Expecting people to share their knowledge with him
				His knowledge needs to be completed by others
				Expect the recipient will give feedback
		Indirect		The balance relationship of humans, Gods, and nature
				Expect the recipients to share the knowledge he shares with other people
				If I get something, you get something too
				If I do not share, I will not get new knowledge from others
	The power of knowledge sharing			Sharing knowledge to increase power
				To increase his own knowledge
				To improve his knowledge
Extrinsic	Relationship with recipients	Responsibility		I have to share knowledge

Intrinsic and Extrinsic Motivations to Share knowledge				
				To get research funding
				To provide a prime service to stakeholders
				As a management team member, need to be the sample
				As someone who holds structural position
		Obligation		Policy to develop knowledge in forums
		Relationship with recipients		The subject is taught by more than 1 lecturer and the material has to be the same. Having similar expertise
				So that other friends have similar perceptions of teaching material.
	Reward	Tangible		Certification
				To get research funding
		Less tangible	Recognition	Feeling useful, his work is used as a reference. The knowledge once shared is useful
				As a management team member, need to be the example
				The knowledge shared is used by others.
				More and more people come to him

From the descriptions above, it can be concluded that there are intrinsic and extrinsic motivations which motivated Top Management at RS1 to share knowledge. The intrinsic motivation could be perceived as the power of knowledge, reciprocity, and the power of sharing knowledge. The perceived power of knowledge on the table was indicated by their motivation to share in order to make knowledge stronger or to use the knowledge to make change. Reciprocity in this data could be direct reciprocity such as to get new knowledge when Top Management participants received feedback from recipients or the knowledge needed to be completed by knowledge from recipients (feedback). It could also be indirect reciprocity (downstream and upstream). It was downstream indirect reciprocity when the Top Management participants shared knowledge to get a balanced relationship of human, Gods, and nature. So it was not a direct result but a future effect from the sharing they had done. Upstream indirect reciprocity was when they

received new knowledge. It meant other people should have got it through him too. Negative reciprocity happened when they shared knowledge because if they did not share it, they would not get new knowledge. Meanwhile, the power of sharing knowledge was an intrinsic motivation as they believed if they shared knowledge, they could increase their knowledge (power) and advance the knowledge they had.

Extrinsic motivation in the table above included relationships with recipients and rewards. The relationship with recipients was when they shared knowledge because they were part of the group of lecturers who taught similar subjects. It was also when they needed to have similar perceptions with the group members about the knowledge. The relationship with recipients could also be influenced by feeling responsible. They felt responsible re sharing knowledge with the recipients because they were Top Management participants. Because of their structural position, they thought that it was their responsibility to share knowledge with sub-ordinates, to get research funding for the members in the institution, to give prime service, or to be the example for sub-ordinates so that the sub-ordinates would share knowledge as well. Top Management participants also thought that they had to be assured that the policy regarding academic forums (where they share knowledge on research) was conducted. Besides the relationship with recipients that motivated Top Management to share knowledge, reward was also a motivation to share. Top Management participants shared knowledge because they needed to get certification which could be used to upgrade their rank. Moreover, they shared knowledge because they wanted to get research funding. However, the reward could also be less tangible such as recognition. This was actually the stronger reward which motivated them to share knowledge. They shared knowledge because they wanted to feel useful, their work was being used as a reference, they wanted to set an example or be the centre of attention, or they wanted more and more people to come to them.

M.1.2. Middle Managers' Intrinsic and Extrinsic Motivations to Share Knowledge

Table M.2.

Middle Managers' Intrinsic and Extrinsic Motivations (RS1)

Intrinsic and Extrinsic Motivations to Share knowledge				
Intrinsic	Perceived power of knowledge			To improve department administration
				To improve the teaching system
				To improve our weaknesses for next semester
	Reciprocity	Direct		Because he gave me information, I felt like having to give her information too
				I can ask my friends ideas regarding my research proposal to improve it
				My friends' feedback
		Indirect		If we share, other friends will share knowledge with me too.
				The more people know about the knowledge, when I have a problem, more people will help
				Friends will share knowledge back
				One day, if I have a problem, friends will help him
	Assurance			To find out what we know is right
				To assure other people's knowledge is right
	The power of knowledge sharing			To improve his power by sharing knowledge
				Sharing knowledge can increase my power, more people agree with his idea
				Increase my power
Extrinsic	Relationship with recipients	Responsibility		Sharing knowledge is his responsibility as a manager.

Intrinsic and Extrinsic Motivations to Share knowledge				
				Commitment to community (<i>Tridharma</i>)
				My responsibility to share knowledge
		Obligation		The director asks to share information
				That is what we should do
				I must share knowledge as it is my obligation
				Obligation to improve myself
	Reward	Tangible		
		Less tangible	Recognition	Proud, as the information comes from him
				To help a community (project)
				If I share knowledge, people will think I have a lot of knowledge
				People come to me if they have problem
				Try to be accepted, the ideas are accepted, self-existence
				Being a reference, feel like an expert
				Becomes a sample
	Equality			Did not have chance to get knowledge during childhood
				Not all of members can attend the training. By sharing knowledge, all of members can adjust or upgrade what they know
	To get support			Other people must know to avoid miscommunication during discussions

Table M.2. describes the Middle Managers' intrinsic and extrinsic motivations for sharing knowledge. Their intrinsic motivation could be the perceived power of knowledge, reciprocity, assurance, and the power of knowledge sharing. Middle Managers shared knowledge because they needed to improve departmental administration, the teaching system, and "our weaknesses" for the next semester. They recognised the power of knowledge. Meanwhile, reciprocity was a motivation

to share. For example, “He gave me information, I felt like having to give her information too.”, “If we share, other friends will share knowledge to me too.”, and “One day, if I have problem, friends will help me”. To assure other people’s knowledge was right was one statement which indicates that assurance was another motivation.

Extrinsic motivations were relationships with recipients, rewards, equality, and to get support. The rewards here could be tangible (money) or less tangible such as recognition. For example, they noted “If I share knowledge, people will think I have a lot of knowledge”

M.1.3. Lecturer-Unit Participants’ Intrinsic and Extrinsic Motivations to Share Knowledge

Table M.3.

Lecturer-Unit Participants’ Intrinsic and Extrinsic Motivations (RS1)

Intrinsic and Extrinsic motivations to share knowledge				
Intrinsic	Perceived power of knowledge	To share positive aura		
	Reciprocity	Indirect		To share positive aura
				Religious factors
	The power of knowledge sharing			To find new knowledge
				When we share knowledge, our knowledge is increased
	To achieve the objective			We can design a curriculum which is like the curriculum in Asia
	Equality			I should share with them so that they also have the knowledge that I receive during training
Extrinsic	Relationship with recipients	Obligation		Because it is my obligation to share
				It is a must
		Responsibility		Because it is our responsibility
		Unifying		The students must receive similar teaching material even

Intrinsic and Extrinsic motivations to share knowledge				
				though the students were in different classrooms
	Rewards	Less tangible	Being acknowledged	I feel very proud. Recognised.
				I like being recognised
			To maintain self-image	I don't want people think I am a stingy person.

Lecturer-Unit participants shared knowledge motivated by intrinsic and extrinsic motivations. The perceived power of knowledge, reciprocity, the power of knowledge sharing, to achieve the objective and equality were their intrinsic motivations. Meanwhile, their extrinsic motivations were relationships with recipients and rewards. Both Lecturer-Unit participants did not mention that tangible rewards were one of their motivations to share knowledge .

M.1.4. Lecturer-Teaching Participants' Intrinsic and Extrinsic Motivations to Share Knowledge

Table M.4.

Lecturer-Teaching Participants' Intrinsic and Extrinsic Motivations (RS1)

Intrinsic and Extrinsic motivations to share knowledge				
Intrinsic	Perceived power of knowledge	Influencing people		We can influence other people
	Reciprocity (getting feedback)	Direct		So that I can get feedback from them
	The power of knowledge sharing			When I share knowledge, the knowledge will increase
	Donation			I have something that we can donate
	Humanity			Motivation is...humanity
Extrinsic	Relationship with recipients	Obligation		I must submit a report
		Completing each other		So that my colleagues and I complete each other
		Unifying		Usually share knowledge to unify the

Intrinsic and Extrinsic motivations to share knowledge				
				questions for examinations
		Delivering the correct teaching material		We could deliver the correct teaching material to our students
		Feeling as one/in the same team		I feel like we are one here
	Rewards	Less tangible	Being acknowledged	People will look up me

Lecturer-Teaching participants shared knowledge motivated by intrinsic and extrinsic motivations. Tangible reward was not one of their extrinsic motivations to share. They were more likely to be motivated by less tangible rewards.

M2. Research Site 2

M.2.1. Top Managers' Intrinsic and Extrinsic Motivations to Share Knowledge

The presentation of the research findings above also shows that the motivation of Top Managers at RS2 to share could be intrinsic, extrinsic or both. Table D.29. illustrates the intrinsic and extrinsic motivations to share knowledge. Table M.5.

Top Managers' intrinsic and extrinsic motivations to share knowledge

Motivation to share knowledge				
Intrinsic	Perceived power of knowledge			To make the knowledge meaningful
				Strengthening the topic discussed
		The power of knowledge sharing		Sharing makes me more powerful
	Reciprocity	Direct		More knowledge, will be respected
				To enrich his knowledge
		Indirect		Good deed. Sharing knowledge is part of religious doctrine (Islam), Need more knowledge to do good deeds
				Following prophet Mohammad
	Assurance			What I do is correct

Motivation to share knowledge				
	Health			Sharing knowledge will develop his brain to avoid dementia
Extrinsic	Relationship with recipient	Responsibility		Responsibility as the First Director Assistant
		Obligation		Obligated to make a report
	Reward	Tangible		
		Less tangible	Recognition	Role model
				Sharing knowledge with others will show my power,
				To look smart, Being useful by giving my contribution
	To get support			People agree with my input
				To share with those who have similar ideas to make me stronger

Motivation was intrinsic if knowledge was shared motivated by the fact that sharing knowledge would develop the knowledge itself (perceived power of knowledge); would give the sharer more knowledge or something from God in return (reciprocity) which could be downstream and upstream; would assure that what the sharer was doing was correct (assurance); and would support the sharer's health. Motivation was extrinsic if knowledge was shared because the sharer expected something in return as presented in Table M.5.

The power of knowledge sharing, another motivation in this research, could be categorised as both intrinsic and extrinsic. By sharing knowledge, the sharer believed that the knowledge would be developed and at the same time whoever owned more knowledge (by sharing knowledge) would be more powerful.

M.2.2. Middle Managers' Intrinsic and Extrinsic Motivations to Share Knowledge

Table M.6. demonstrates the types of motivation to share knowledge which can be intrinsic and extrinsic or both. Columns 2, 3, and 4 describe the specific types of the intrinsic and extrinsic motivation to share. For column 2, the subtypes of the findings for the Middle Management's motivation to share are: Perceived power to

knowledge, reciprocity, relationship with recipient, reward, and to get support. Column 5 shows the Middle Managers' motivations to share knowledge.

Table M.6.

Middle Managers' Intrinsic and Extrinsic Motivations (RS2)

Motivations to share knowledge				
Intrinsic	Perceived power of Knowledge			To have deeper learning
				Those who have knowledge, will be lifted, according to religion
				Make a better product because of collaboration
				Sharing to reach goals
		The power of knowledge sharing		Sharing makes me even more powerful
	Reciprocity	Direct		Gratitude - to share something with others who share something with me
				Sharing reinforces the giver and the recipient
				To gain more knowledge
				I share knowledge because I need to know the knowledge further
				So that people (from other fields) will give input to create a machine
		Indirect		God Increases my knowledge (Because of Him)
				Feel thankful because we can help others (by sharing knowledge), giving useful knowledge
				Sharing knowledge will

Motivations to share knowledge				
				be a prayer when I die
Extrinsic	Relationship with recipients	Responsibility		Part of his duty
				Sharing knowledge to support them (subordinates) doing their job as it is part of his duty
		Obligation		Sharing with the community because I feel obligated
				Obligation as a lecturer
		Relationship with recipients		The motivation is because we are lecturers
	Reward	Tangible		Financial reward
		Less tangible	Recognition	Need to be acknowledged
				Thank you is an appreciation
	To get support			To help me with my work
				To make a better product/design

The reciprocity of the findings could be direct and indirect if the return from the sharing is received at another time or not at all. The relationship with recipients also motivated them to share, which could be because of their responsibilities, obligations, or the relationship with recipients. The reward, which motivated Middle Managers at RS2 could be either tangible or less tangible. The power of knowledge sharing in this finding was classified as both intrinsic and extrinsic.

M.2.3. Lecturer-Unit Participants' Intrinsic and Extrinsic Motivations to Share Knowledge

Table M.7. identifies the Lecturer-Unit participants' motivations as intrinsic or/and extrinsic. Intrinsic and extrinsic motivations to share are described in Column 1. Columns 2, 3, and 4 describe the specific types of the intrinsic and extrinsic motivations. Column 5 shows the Lecturer-Unit participants' motivations as listed in Table M.7.

Table M.7.

The Lecturer-Unit's Intrinsic and Extrinsic Motivations (RS2)

Motivations to share				
Intrinsic	Perceived power of knowledge			Feel happy and expecting the knowledge I give will change people
				I just like to share information. (I feel frustrated if someone could not operate it well) I can show you how to do things better
				Believe that the knowledge from me will improve others
				The knowledge shared will improve others and make them better lecturers when teaching students
				Sharing knowledge to help others do their work, to achieve objectives to work faster
				The knowledge I share creates power for others
		The power of knowledge sharing		I get more knowledge when I share knowledge
	Reciprocity	Direct		Sharing knowledge makes me more powerful
				To have new knowledge
				To increase his knowledge
				Thank you is an appreciation which can make me want to give the receiver more knowledge
		Indirect		To do a good deed by helping others (share

Motivations to share				
				knowledge) based on religion
				Not all of us can attend the training, and if they attend a training later, maybe they will share it with me too
				Do good things will bring me good things as well
	Assurance			To share something good and hoping that it will be good for others too
				To make the knowledge more comprehensive
				To strengthen the knowledge, to clarify the knowledge
	Health			Sharing makes me remember better or know better about the knowledge
Extrinsic	Relationship with recipient	Obligation		Sharing knowledge with the community to reach points (to upgrade his level)
	Reward	Less tangible	Recognition	Feeling happy and expecting the knowledge I give will change people
				I feel appreciated after sharing knowledge and they say thank you
				I just like to share information. (I feel frustrated if someone could not operate it well) I can show you how to do things better
				I can do something since I can share the information I have

Motivations to share				
				Thank you is an appreciation which can make me want to give the receiver more knowledge
				Being accepted
				Comfortable feeling from sharing knowledge with others (as being accepted by others) will make me feel appreciated
	To get support			Sharing knowledge will help me do my job

The specific types of motivations to share were: perceived power of knowledge, reciprocity, assurance, health, relationship with recipients, rewards, to get support, and both intrinsic and extrinsic motivations. The power of knowledge sharing in this finding was classified into both intrinsic and extrinsic because in addition to the expectations of reciprocity, they shared knowledge as they believed they would become more powerful.

For intrinsic motivation, the perceived power of knowledge could be believing that the “knowledge from me will improve others” and make them better lecturers when teaching students. The reciprocity in these findings can be direct such as to have new knowledge and it can also be indirect such as to do a good deed by helping others (share knowledge) based on religion. Other intrinsic motivations were assurances such as to share something good hoping it would be good for others too and also health such as “sharing makes me remember better or know better about the knowledge.” For extrinsic motivation, relationships with recipients, rewards, and support motivated the members of Lecturer-Unit group at RS2 to share knowledge.

M.2.4. Lecturer-Teaching participants’ intrinsic and extrinsic motivations to share knowledge

The findings show that the Lecturer-Teaching’s motivations to share can be categorised as intrinsic and extrinsic as listed in Table M.8.

Table M.8.

The Lecturer-Teaching Participants' Intrinsic and Extrinsic Motivations (RS2)

Motivations to share knowledge				
Intrinsic	Perceived power of knowledge	The power of knowledge sharing		I would receive more knowledge if I share knowledge
	Reciprocity	Direct		I share knowledge because I expect the recipients would share or give feedback to me
	Assurance			I need to make sure that I do not teach wrong material
Extrinsic	Relationship with recipients			Because I want to match the teaching material. We teach a similar subject
				If I have a strong relationship with the recipients
		Obligation		I will share because of the demands of my obligation in teaching,
	Reward	Less tangible	Recognition	I think recognition or just thank you is more effective to motivate me to share
				I felt appreciated when I shared knowledge. It makes me happy
		Tangible		Financial reward encourages me to share more
	Because they ask me to share			I share because they ask me to
To show respect			Sharing back shows that I respect his sharing	

The intrinsic motivations to share knowledge by Lecturers-Teaching at RS2 were reciprocity and assurance while the extrinsic motivations were relationship with recipients, rewards, because they ask me to share, and showing respect. The power of knowledge sharing was considered as both intrinsic and extrinsic motivation in these findings.

M.3. Research Site 3

M.3.1. Top Managers' Intrinsic and Extrinsic Motivations to Share Knowledge

Table M.9. identifies the Top Managers' motivations to share knowledge which could be intrinsic or extrinsic.

Table M.9.

The Top Managers' Participants' Intrinsic and Extrinsic Motivations (RS3)

Motivations to share knowledge				
Intrinsic	Perceived power of Knowledge	The power of knowledge sharing		When we share knowledge, our knowledge is actually increased
	Reciprocity	Direct		Completing each other (reciprocity)
				Who knows, we will get feedback
				Gaining more knowledge in return (reciprocity)
			Gratitude	I have a thankful feeling
		Indirect		Gaining reward from God (reciprocity)
				Well, from religious point of view, the more we share, the more we get rewards from God.
Extrinsic	Relationship with recipients	Responsibility		Supporting the Director/the First Director's Assistant's work (to develop the institution)
				Our objective is to support the institution and the study programs
				Motivating subordinates
		Relationship with recipients		Because our motive, in an academic institution, is not merely about money. But also about networking
	Reward	Tangible		DIKTI rewarded me with some money as a director. It motivates me
		Less tangible	Recognition	Inevitably, they respect me, appreciate me
		Maintaining self-image		So we cannot be stingy

Reciprocity as a motivation to share knowledge could be direct and indirect. The direct reciprocity was influenced by gratitude as well. The relationship with recipients also motivated them to share as the sharing related to their responsibility. The reward could be tangible and less tangible.

M.3.2. Middle Managers’ Participants’ Intrinsic and Extrinsic Motivations (RS3)

Table M.10. demonstrates the Middle Managers’ motivations to share knowledge. The motivations could be intrinsic or extrinsic.

Table M.10.

The Middle Managers’ Participants’ Intrinsic and Extrinsic Motivations (RS3)

Motivations to share knowledge				
Intrinsic	Perceived power of Knowledge	The power of knowledge sharing		When I share knowledge, I become even more powerful
				I get more power when I share knowledge
				I can implement my ideas. That is the main point
	Reciprocity	Direct		We receive, we share back
				Then when I discuss the topic, he can give feedback
		Indirect		According to my religion, Islam, sharing knowledge will give us continuous good deeds
	”Saving memory” (health)			Because I do not need to make my memory full
				When I share knowledge, I feel light
				Save it to my friends’ memory
				I do not feel good because I do not share. I will also feel dizzy
Extrinsic	Relationship with recipients	Obligation		We must make a report
				I feel like it is my moral obligation
				It is an obligation
		Relationship with recipients		My motivation is to have similar ideas or perceptions among lecturers
				So that we have similar perceptions
				Especially with my close friends...I just share
	Reward	Less tangible	Recognition	Respect. People respect me
				I am being respected, appreciated

Motivations to share knowledge				
	Supporting the work as a lecturer			Because by sharing, it will assist my work

Saving memory was one of the intrinsic motivations to share for Middle Managers at RS3. The indirect reciprocity was influenced by religion. The relationship with recipients also motivated them to share as the sharing related to their responsibility. Tangible reward was not one of the Middle Managers' extrinsic motivations to share knowledge.

M.3.3. Lecturer-Unit Participants' Participants' Intrinsic and Extrinsic Motivations (RS3)

Table M.11. shows the Lecturer-Unit participants' motivations to share knowledge. The motivations could be intrinsic or extrinsic:

Table M.11.

The Lecturer-Unit participants' Participants' Intrinsic and Extrinsic Motivations

Motivations to share knowledge				
Intrinsic	Perceived power of knowledge	The power of knowledge sharing		I even get more knowledge if I share my knowledge.
				I become more powerful
	Finding greater knowledge			Share because we would like to find a greater knowledge than the knowledge we shared
Extrinsic	Relationship with recipients	Responsibility		Part of my job is to share information. My responsibility
		Relationship with recipients		Because they ask me to
	Reward	Tangible		I feel happy if I get financial reward
				I am glad because I get money. It will encourage me to share.
		Less tangible	Recognition	I do that because I do not want people to look down at me
				I expect he will think that I have something too

Motivations to share knowledge				
	Improving her work			We still need to develop the material more

The perceived power of knowledge and finding greater knowledge were the Lecturer-Unit participants' motivations to share. The rewards as one of their extrinsic motivations to share knowledge could be tangible rewards or less tangible rewards.

M.3.4. Lecturer-Teaching participants' Participants' Intrinsic and Extrinsic Motivations (RS3)

Table M.12. describes the Lecturer-Teaching participants' motivations to share knowledge. The motivations could be intrinsic or extrinsic.

Table M.12.

The Lecturer-Teaching Participants' Participants' Intrinsic and Extrinsic Motivations (RS2)

Motivations to share knowledge				
Intrinsic	Perceived power of Knowledge	The power of knowledge sharing		So the more we share, the more knowledge we have
	Saving the knowledge from extinction			The knowledge will be extinct if I do not share it
	Reciprocity	Direct		So I share the issue with my colleagues to get feedback
		Gratitude		I think I just want to pay back what she shares
Extrinsic	Relationship with recipients	Obligation		If we have knowledge, we must share it
				We must share our knowledge
		Relationship with recipients		To avoid misunderstanding
		Unifying		We just want to have the unified idea
	Reward	Tangible		Financial reward is very important (for me)
		Less tangible	Recognition	When we share knowledge with someone, the recipients will think that we know a lot, we are smart
				I share back because I need to show them that I know something too

Motivations to share knowledge				
	Maintaining self-image			If I do not share knowledge, what would people think about me?
	Because they asked			I only share documents if they ask for them

Reciprocity as an intrinsic motivation to share knowledge could be direct or because of gratitude. The rewards could be tangible rewards or less tangible rewards. Other Lecturer-Teaching participants' extrinsic motivations to share knowledge were relationships with recipients, maintaining self-image, and because recipients asked.