The Role of Mothers' Parenting Styles on Self-Regulated Academic Learning among Saudi Students in Primary Schools

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Abstract

Much of the research on self-regulation has investigated factors of school settings. However, fewer studies have concentrated on the home environment and its influence on student's academic behaviour and achievement in school. The present research investigated the influence of mothers' parenting styles on the extent of students' use of self-regulation strategies in their learning and on student achievement.

The research included 351 primary students (11 and 12 years-old) with their mothers in the Kingdom of Saudi Arabia. This project based on testing the proposition that differences in parenting styles, specifically in whether parents adopt authoritarian, authoritative or permissive practices, influence the extent to which students spontaneously but differentially implement self-regulatory strategies (task value, self-efficacy, cognitive and metacognitive strategy use, metacognitive self-regulation, time and study management, help seeking). The research was conducted using a cross-sectional survey design in which mothers were asked to complete a parenting styles questionnaire (Robinson, Mandleco, Olsen, & Hart, 1995) and their children complete a modified form of the Motivated Strategies for Learning Questionnaire (Pintrich, Smith, Garcia, & McKeachie, 1991). The quantitative data was analysed using SPSS, and Independent Samples t-test, Regression Model, and ANOVA were performed to find relationships between the investigated variables. Results showed that the mothers tend to be authoritative and there was no significant difference found in parenting style by child gender.

Results also revealed that authoritative styles were significantly and positively related to students' self-efficacy, cognitive and metacognitive strategy use, and study and time management, whereas permissive styles were significantly but negatively correlated to self-efficacy and metacognitive self-regulation. Authoritarian styles had no significant relationship with any of the self-regulated learning factors. Child gender in self-regulated learning was also tested and there were significant differences found as girls appeared to score themselves higher than boys in all components of self-regulated learning. Finally, the study showed that self-regulated learning significantly predicted students' achievement, while parenting styles factors were found to be non-significant predictors. It also revealed that there was no significant difference between males and females in

academic achievement. The thesis justifies the current research, summarises relevant literature, outlines the data collection and analysis methods, presents interpretation of the statistical data, discusses the results, and provides implications for policy and future research.

Declaration

'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.'

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Chapter 1 Introduction

Introduction

Over the last few decades, researchers and educational psychologists have stressed the significance of learners assuming spontaneous responsibility and control of their acquisition of skills and knowledge (Zimmerman, 1990). There have been numerous studies regarding what potential variables have affected the development of what is known as self-regulated learning (e.g., Zimmerman & Martinez-Pons, 1990; Bråten & Strømsø, 2005; Perry, VandeKamp, Mercer, & Nordby, 2002). A growing body of research has mainly focused on contexts regarding school environment such as social interactions with peers and teachers (e.g., Perry, VandeKamp, Mercer, & Nordby, 2002; Paris & Paris, 2001; Patrick, 1997), classroom motivational effects and goal orientation (Young, 2005; Bouffard et al., 1995), and academic attitude (Pekrun, Goetz, Titz, & Perry, 2002). Of special interest to the current study is investigating how variables regarding home contexts might influence learners' self-regulated learning and their academic achievement in school.

Though a substantial amount of research has been conducted on school contexts as mentioned above, only a few studies have concentrated on other factors like family environment. Grolnick and Ryan (1989) emphasized how the home and school contexts are related since the beliefs that children acquire and the way they are treated at home would contribute to how they behave academically. "It is imperative to study the family along with the school to understand contextual effects on student motivation and learning" (Epstein, 1989, p. 290). Moreover, it is proposed that the essential role of parents is to influence, control, and teach their children (Pomerantz, Grolnick, & Price, 2005; Darling, 1999).

I hypothesize that preschoolers who have been raised with characteristics such as self-reliance, self-control, and self-expression would be more likely to be self-regulated learners and achieve higher scores when they start their schooling. This belief was initially composed when I noticed that the outcomes of my mother's way in rearing my youngest brother were negative and unfavourable as she used to ask her son to follow her instructions without providing enough reasons. My mother was overly focused on my brother and took much responsibility for his experiences, particularly, his successes or

failures. It can be assumed that the parental practices in excess of over-parenting utilized with my brother influenced his level of academic achievement, as it started to gradually decrease until he dropped out of high school. Hong, Hwang, Kuo, and Hsu, (2015) studied parental monitoring, helicopter parenting, student procrastination, and self-regulated learning. They recommended that in order to develop self-regulated learning in children, parents should reduce over-parenting when they involve themselves in their child's life to the extent of over-protecting, over-controlling, and over-perfecting. Though parenting style can be considered a foremost factor in academic success or failure, particularly with my brother, it is important to consider that there could be other aspects such as the relationship with peers and teachers, school environment, and teaching practices might also have contributed to the outcome.

This study focuses on mothers as they are considered more influential on children than fathers (Leung, McBride-Chang, & Lai, 2004). Fathers are deemed less involved, more distant, and less available to their children (Shek, 1999; Leung, McBride-Chang, & Lai, 2004). The instrument that was used to measure the identified constructs of self-regulated learning must be specified in a certain domain for accuracy and reliability of the results, thus they were adapted to measure students' self-regulated learning and academic achievement in science. This study also focused on primary school students aged 11 to 12 years-old due to the small number of studies investigating this fundamental transforming phase of childhood.

Since there is a limited amount of research on parenting styles associated with self-regulated learning, most of them have concentrated on stages other than late childhood (e.g., Abar, Carter, & Winsler, 2009; Bouffard, Boisvert, Vezeau, & Larouche, 1995; Aunola, Stattin, & Nurmi, 2000). Most researchers believe children's use of self-regulation processes do not functionally begin in childhood, which could be the reason for the focus on later stages. Bruning et al. (2011) argued that children do not self-regulate their learning since their metacognitive awareness, the core element of self-regulated learning, does not evolve during the primary grades. Nonetheless, other researchers disagree with this point of view. One of the first studies to note that children can be self-regulated learners was undertaken by Baumrind (1967) when she focused on a longitudinal sample (preschool through adolescence). Baumrind emphasized the

importance of preschool as an indispensable development stage for most children's values and beliefs. She reported that adolescents of parents who supported autonomy could develop a superior level of self-regulation since they were more independent, mature, active, positive, and achievement-oriented than others in their childhood. Therefore, the purpose of the present study is to investigate the extent to which mothers' parenting styles influence primary school students' academic self-regulation, the factor that is considered important in improving academic achievement (Eshel & Kohavi, 2003; Grolnick and Ryan, 1989).

1.2. Significance of the Study

This study contributed to developing knowledge and ideas about how parenting style influences students' self-regulated learning and academic achievement in the Saudi context. The findings of this study may be useful for parents who realize the significance of parental practices that could provide their children with the necessary self-regulated learning skills needed to enhance their academic outcomes. Furthermore, teachers may also realize the importance of creating a home and school environment conductive to children to acquiring the appropriate learning techniques that make them independent and successful learners. The presence of more self-regulators and high-achievers would then contribute to the successful advancement and development of society in the long term.

Chapter 2

Theoretical Framework

2.1. Introduction

Developmental psychologists such as Baumrind (1971) have long been interested in the link between parenting styles and their different effects on child development. However, there is relatively few research studies focused on the role of family in the context of impeding or fostering the evolution of self-regulated learning skills. The Self-Determination Theory emphasizes that the role of self-regulation of behaviour and personal autonomy are a part of the core needs that must be met in order to creat independent successful students (Deci et al., 1991). Self-regulation is a learned skill, and this learning is shaped by many factors including parenting styles. Psychologists have studied children's cognitive development and how parenting practices influences the way their children behave academically in school (De Oliveira, 2015; Daniel, Wang, & Berthelsen, 2016; Grolnick & Ryan, 1989). This chapter outlines the main learning theory from which self-regulated learning emerged. Additionally, it presents some significant keywords and definitions and brings together various perspectives on the relationship between parenting styles, self-regulated academic learning, and academic achievement.

2.2. Bandura's Social Cognitive Learning Theory

Self-regulated learning (SRL) has its own roots in several distinctive learning theories that are complementary in representing the development of self-regulation. Bandura's Social Cognitive Learning Theory (2001, 1986) comprises three reciprocally interacting aspects: self or personal influences (e.g., attitudes and beliefs), behavioural, and environmental factors (Bruning et al., 2011; Schunk & Zimmerman, 2007). This theory greatly contributed to the establishment of self-regulated learning theory. Bandura's learning theory has assisted cognitive psychologists in their attempt to develop an integral key element that led to the creation of the SRL, (Schunk & Zimmerman, 2007; Perry, Turner, & Meyer, 2006). Thus, the development of SRL is based on Bandura's model of the three reciprocal interactions. To illustrate this, one's self-efficacy belief about reading a passage may influence their reading behaviour in terms of effort and persistence. The

way that a student responds to a problem during the learning process is determined not only by their perception of self-efficacy but also by environmental stimuli through peer and teacher encouragement and enactive outcomes. Therefore, self-regulated learning occurs when students are able of using personal traits strategically to regulate their academic behaviour and the surrounding learning environment (Bruning, Schraw, & Norby, 2011; Zimmerman, 1989).

As the triadic reciprocal causation in Bandura's learning theory sets the theoretical groundwork for the development of self-regulated learning models, the selected variables of self-regulated learning in the present study are mainly based upon Bandura's Social Cognitive Model and the conceptualization of self-regulated learning as defined by Zimmerman (2013, 2002, 1989).

2.2.1 Self-Regulated Learning

Research on cognitive and educational psychology has notably grown out of an interest in demonstrating the concept of SRL. A number of researchers including Schunk and Zimmerman (2013), Winne and Perry (2000), and Perry, Turner, and Meyer (2006) who have dedicated their effort to conceptualizing this sophisticated notion. Accordingly, self-regulated learning is defined as "the modulation of affective, cognitive, and behavioural processes throughout a learning experience to reach a desired level of achievement" (Sitzman & Ely, 2011, p. 422). Bruning, Schraw and Norby (2011) referred to SRL as "the ability to control all aspects of one's learning, from advance planning to how one evaluates performance afterward" (p.114). They proposed that self-regulators typically consider learning acquisition as a controllable and systematic process, and they take greater responsibility for their achievement outcomes. SRL describes learners as self-motivated, mastery-oriented, effective, strategic, and more capable to comprehend their own learning progression than their passive peers (Zimmerman, 2002).

Even though definitions of self-regulated learning vary depending on researchers' theoretical orientations, Zimmerman (1989) argued that there is a common conceptualization that classifies self-regulated learning into three dominant components, which are metacognitive, motivational, and behavioural processes. In terms of metacognitive processes, Bruning et al., (2011) and Jacobs and Paris (1987) proposed that

good self-regulators use their knowledge of cognition by determining what factors and strategies are more effective for their performance and learning (declarative knowledge), how to apply the selected cognitive strategies into their plan (procedural knowledge), and when and why to utilize those strategies (conditional knowledge). A few of the cognitive strategies used by self-regulated learners are rehearsing, elaborating, memorizing, and organizing. They also have argued that self-regulated learners have the capability to regulate their cognition by planning (setting goals, budgeting time, activating relevant knowledge), monitoring (testing one's understanding and selecting repair strategies), and evaluating (appraising one's achieved goals, consolidating intellectual gains, modifying predictions for the future). These metacognitive processes performed by self-regulated learners through during their learning enable them to be decisive, knowledgeable, and self-aware in their approach to learning.

In terms of motivational processes, Bandura's Social Cognitive Learning Theory posited that self-regulated learners report higher self-efficacy than others as they are more flexible in incorporating critical factors such as setting goals, persistence, help seeking, and task engagement (Zimmerman & Martinez-Pons, 1990). Attribution Theory stated that self-regulated learners attribute their success to internal, stable, and controllable traits, which increases their confidence to succeed again (Bruning et al., 2011). Self-Determination Theory argued that self-regulators are more autonomous as they feel a greater sense of control, leading to more task-related effort, increased persistence, and better use of feedback (Schunk & Zimmerman, 2012). In their behavioural processes, self-regulators are more able to self-reinforce during enactments and self-instruct during acquisition (Zimmerman, 2013; Rohrkemper 1989). In other words, they have the ability to select, adjust, and structure convenient learning environments for themselves to better achieve their goals. They seek out information, advice, and places enable them gain knowledge.

Zimmerman (2002) has determined three essential phases of self-regulatory processes: the forethought phase (task analysis, planning, self-motivation, beliefs) the performance phase (self-control, self-instruction, attention, self-observation), and the self-reflection phase (self-judgment, evaluation, casual attribution, self-reaction). All students employ regulatory processes to some degree, but those who are considered to be self-regulated

learners are differentiated by their high awareness of crucial relations between their regulatory responses and their outcomes of learning, and by their use of cognitive, metacognitive, motivational, and management strategies to achieve their academic goals (Zimmerman, 2002; Zimmerman, 1989).

2.3. Parenting Styles

The concept of parenting style (PS) is utilized to capture normal variations in parents' attitudes in controlling and socializing their child (Huang & Prochner, 2003). PS is a general construct representing the entire emotional tone of the parent-child relationship (Masud, Ahmad, Jan, & Jamil, 2016). According to Maccoby and Martin (1983) and Baumrind (1971, 1989, 1991), parenting styles are comprised of the two dimensions of demandingness and responsiveness. Demandingness refers to parents' maturity demands, control or disciplinary efforts, supervision, and willingness to provoke the child who disobeys. Responsiveness refers to how parents' fostering self-regulation, individuality, and self-assertion in their children by their own warmth, involvement, and acceptance, as well as being supportive, attuned, and acquiescent to their children' needs.

Baumrind (1971) primarily conceptualized eight sorts of parenting styles including nonconforming, authoritative nonconforming, and rejecting-neglecting. Meanwhile, Baumrind incorporated sex-role traditional as a supplemental form of parenting styles. This form considers those parents who use different parenting styles depending on their children's gender. Research on the field of parenting style has predominantly concentrated on only three types of parenting styles that are seen as prevalent and inclusive: (a) authoritarian, (b), authoritative, and (c) permissive (Gonzalez, Holbein, & Quilter, 2002; Baumrind & Black, 1967). According to Baumrind's definition, authoritarian parents are demanding and rejecting; authoritative parents are demanding and accepting; and permissive parents are liberal and rejecting. To illustrate more, authoritarian parents are those who place high demands on their children's behaviour and enforce strict discipline (Leung & Kwan, 1998). They are extremely controlling as they do not provide opportunity for their children to share their ideas or make their own arrangements and decisions. Additionally, they tend to have poor affiliated relationships

with their children since they discourage open communication and show a low level of trust and engagement towards their children (Aunola, Stattin, & Nurmi 2000).

In contrast, authoritative parents are those who place high demands on their children's behaviour but they depend of explanations on rules rather than enforcing strict discipline and obedience (Gonzalez, Holbein, & Quilter, 2002). Authoritative parents regularly encourage parental involvement in many ways. They promote a high level of open communication, active participation in the child's life, encouragement of psychological autonomy, trust toward their child, parental acceptance, high monitoring and behavioural control, and possess awareness of their children's types of friends and places they go (Aunola, Stattin, & Nurmi, 2000). Permissive parents encourage their children's autonomy but they have very little control over their children's performance and behaviour. They encourage single-handed decision-making and enable their children to regulate their own activities without becoming involved themselves (Dwairy et al., 2006). They keep themselves away from confrontations and tend to be supportive and warm towards their children's unfavourable behaviours even when the children show willfulness and assertiveness towards them. They exhibit non-controlling behaviours, make few demands, and use minimal punishment (Driscoll, Russell, & Crockett, 2007).

Previous research has revealed that parenting style influenc children's academic self-regulation and academic achievement in different ways. Those studies, especially those that performed in western cultures, showed that children of authoritative parents tend to experience the most positive outcomes and are more successful in their academic work. Children of authoritarian and permissive parents usually fail to accomplish their tasks and are unwilling to persist in their studying because of poor control and the limited guidelines provided (Abar, Carter, & Winsler, 2009).

2.4. Multidimensional Studies of PS, SRL, and Academic Achievement

In this section, research into PS and SRL in Western and other contexts is reviewed. There is plentiful literature in the Western world on parenting style, self-regulated learning, and academic achievement; however, there are only limited studies investigating these relationships in Asian cultures. There were no studies were found on direct

relationships between PS and SRL in the Saudi context. However, there were some findings on the common type of PS that Saudi parents typically use to raise their children.

2.4.1. Western Research

Since Baumrind first proposed her parenting style model in 1971, western researchers have concentrated their attention on the relationsships between PS and the potential aspects that could improve children's performance in school. Most of the research on PS undertaken in western cultures shows that an authoritative parenting style seems to be highly correlated to academic success when compared to permissive and authoritarian styles (e.g., Abar, Carter, & Winsler, 2009; Juang, & Silbereisen, 1999). For example, Aunola, Stattin, and Nurmi (2000) and Abar, Carter, and Winsler (2009) found that an authoritative parenting style, involving autonomy support, was found to be connected with students' high level of performance and achievement, school adjustment, strong school engagement, and positive attitudes towards school. Grolnick and Ryan (1989) concluded that parental autonomy support and involvement were positively correlated to children's level of self-regulated learning. Furthermore, they predicted the degree to which children regulate and initiate the responses that emanate from their substantial sense of self. More research was done to explain how certain parenting styles contribute in fostering different aspects of SRL.

Carrol and Roche (2004) investigated the association between parenting behaviour and adolescents' SRL processes, and found that there is a substantial correlation between parenting practices and student's academic self-regulation, which influences school related behaviour. Gonzalez and Wolters (2008) studied the relationship between PS and motivation to achieve higher academic outcomes. They found a solid relationship between authoritative PSs and motivational aspects that were measured through a mastery goal orientation and autonomy. Erden and Uredi (2008) explored the effect of perceived PSs on SRL strategies and motivational beliefs in primary schools. They reported that the dimensions of SRL related to task value, self-efficacy, and cognitive and metacognitive SRL strategies were influenced by PS. They also noticed that students with authoritative parents use more cognitive and metacognitive strategies and place higher task value and self-efficacy than students of authoritarian and indulgent (permissive) parents.

Though findings on authoritarian and permissive parenting styles have reported that they negatively influence students' SRL, some studies posited each style affects children differently. For instance, authoritarian parenting styles are strongly associated with assertiveness and poor self-reliance (Spera, 2005), and permissive parenting styles are linked with indifference and disobedience (Aunola, Stattin, & Nurmi 2000). Permissive styles have the most negative influence on children's academic self-regulation because of the highly uncontrolled environment (Gonzalez, Holbein, & Quilter, 2002; Abar, Carter, & Winsler, 2009; Aunola, Stattin, & Nurmi 2000). Moreover, permissive styles have been linked with children's underachievement as the result of being disadvantaged (lacking guidelines and instructions to behaviourally and academically succeed) and impulsive (Maccoby & Martin, 1983; Onatsu-Arvilommi, & Nurmi, 1997). "Parents are most successful when they use small amount of power assertiveness in combination with reasoning or induction in their parenting style as opposed to being overly strict and rigid or overly permissive" (Abar, Carter, & Winsler, 2009, p. 262). Thus, the positive effect of an authoritative parenting style is assumed to be related to the encouragement of critical thinking and independent problem solving (Aunola, Stattin, & Nurmi 2000). It has been proven that when parents encourage their children to independently direct themselves during their learning processes, they achieve higher scores than others.

A longitudinal study, Daniel, Wang, Berthelsen (2016), found that children whose parents positively and supportively responded and interacted with them had a better level of SRL. They also declared that as the relationship between parents and their children developed in a better way, the child's academic achievement improved over time. This was in contrast to those children who had a non-encouraging relationship with their parents. Gonzalez-Pienda et al., (2002) examined the association between parenting with positive interaction and its effects on cognitive-affective variables of SRL, including academic aptitudes and attribution. They concluded that parenting characterized with a high level of involvement is associated with higher children's achievement through components of SRL behaviours. Parents should take into account the importance of developing their children's aspects of SRL, as it is evident from previous research that SRL plays an essential role in enhancing academic outcomes.

It is determined that SRL components are the most investigated variables linked to students' achievement in school. Wilson and Narayan (2016) investigated the relationships between task self-efficacy, SRL strategy use, and academic performance and found that students who had higher self-efficacy and used more learning strategies performed better in their tasks. In another study, Zuffuanò et al., (2013) explored the ability of self-efficacy and SRL to predict students' academic achievement in high schools in Italy and the study results supported the unique contribution of SRL to academic achievement at the end of the school year. Kistner et al., (2010) concentrated on instructing elementary students to improve their use of cognitive and metacognitive strategies such as organizing and planning, as well as enhance their motivation and resource management. They found that the promotion of the strategy techniques was positively associated with a gain in performance.

In relation to gender, research revealed some differences between females and males in respect to be more self-regulated and achieve higher grades. For example, Bidjerano (2005) surveyed 198 (39% male and 61% female) undergraduate students to examine their differences in processing some degree of SRL. Female students appeared to over-report the use of cognitive strategies, metacognitive processes, and time and study management skills. However, no statistically significant gender differences were determined in help-seeking and critical thinking skills. Britner and Pajares (2001) studied gender difference in motivational factors and achievement in middle schools. They discovered that self-efficacy was the only motivational variable that predicted science achievement. Interestingly, girls reported stronger self-efficacy than boys and received higher grades in science. That could due to the parenting style that mothers use in rearing children since most research in western cultures indicates that mothers are more authoritative with girls and have a better control over them than boys (Choquet et al., 2008; Conrade & Ho, 2001; Russell, Hart, Robinson, & Olsen, 2003; Varela et al., 2004). It is surprising to discover that these findings are mostly confined to the western culture and may not apply to other societies with different cultures, morals, values, and beliefs.

2.4.2. Asian Research

When considering a different culture such as Asian, fewer studies were found in respect to how PS influences students' SRL and academic achievement. Some of the

earlier research performed in Asian countries such as China, differed considerably in their findings compared with other cultures. Western parents tend to be mostly authoritative with their children, yet Asian research revealed that Chinese parents appeared to be more authoritarian (Dornbusch et al., 1987; Sue, & Abe, 1995; Chao, 2001). When applying authoritarian child-rearing practices in an authoritarian culture such as Asian ones (Chao, 1994; Chao, 2001), it appears that it has a different meaning and effect from what is known in the West. For example, while an authoritarian parenting style is found to be related to poor academic achievement in European-American societies, most students from Asian countries were found to outperform European-American students (Sue, & Abe, 1995; Chao, 1994; Chao, 2001). Dornbusch et al. (1987) also asked a number of high school students to score their parents' level of control. The results indicated that Asians were the highest on authoritarian styles of parenting, but they received the highest grade-point averages compared with other students.

Nonetheless, more recent research such as Huang and Prochner (2003) and Kelley (2004) provided contrary findings that conveyed that child-rearing practices in China are deemed authoritative and that was positively and significantly related to children's ratings of SRL and academic achievement. These researchers stated that the varied findings could be the results of the economic and social changes rapidly occurring in China. Although cultural similarities exist across Asian societies such as China, Korea, Japan, and Thailand, there is also some variation between clans within a country, albeit subtle and often disregarded in the pertinent literature (Brown & Iyengar, 2008; Roskam & Meunier, 2009; Choi, Kim, Kim, & Park, 2013). In a Japanese study, Watabe and Hibbard (2014) examined the influence of PS on academic achievement and motivation among elementary school students assuming that an authoritarian PS is associated with higher academic achievement and motivation based on collected previous research. The results indicated that there was no support for the predicted hypothesis that Japanese students obtain higher academic achievement and motivation with an authoritarian PS. "Parental influences are not appropriate predictors of school success for Asian youngsters" (Chao, 1994, p. 1112). This statement indicates that parenting styles affect children from various cultures differently. Thus, it is assumed that parenting styles in the Arab or Muslim world

might also vary in their effectiveness on children's self-regulated learning and academic achievement from some other previous studies.

Despite a diligent search, no studies found investigated the effect of parenting styles on students' self-regulated learning and academic achievement in Saudi Arabia. Rather, some findings identified a common type of parenting style implemented by most Saudi parents. According to Dwairy et al. (2006), parenting styles in a traditional country like Saudi Arabia tend to be more authoritarian. Typically, children of Arab or Muslim cultures consider the application of punishment as the conventional duty of their parents and teachers since this is the predominant way of disciplining unfavourable behaviour. Even though findings show that Saudi parents are authoritarian, they treat boys and girls differently and tend to be more authoritarian with boys. Achoui (2003) stated that around 67.5% of Saudi female college students reported that they were physically punished at different phases of their lives. Although it is widely considered that women are treated more strictly in Arab societies, Achoui (2003) argued that Saudi male children experience more punishment than Saudi female children. As Saudi parents appear to have different parental practices depending on their child's gender, that could be a reasons for the differences in academic achievement between boys and girls.

Generally, female Saudi students achieve higher scores than male Saudi students. Females in Saudi Arabia outperform males in many areas such as math, engineering, technology, and medicine (Amos, 2015; Al-Mulhim, Elsharawy, & Al Awad, 2012). In a Saudi study investigating the performance of male and female undergraduates studying surgical examination, it was reported that female students scored significantly better than male students in subjective tests (Al-Mulhim, Elsharawy, & Al Awad, 2012). As a result, authoritarian parenting styles could perhaps negatively influence Saudi male students' self-regulated learning and academic outcomes more than females, whose parents tended to be less authoritarian with them. Since there were no studies on the relationships between PS, SRL, and academic achievement conducted in the Saudi context, it was useful to undertake research performed in similar cultures like Islamic or Arab societies in Asia.

Even though there are also very few studies investigating the relationship between PS, SRL, and children in the Islamic world, most of the research indicated that parents in

Islamic countries generally appear more authoritarian (Dwairy et al., 2006; Alsheikh, Parameswaran, & Ethoweris, 2010; Achoui, 2003). For example, in the United Arab Emirates (UAE) the concept of the ideal child is closely tied with the traditional values and morals in Islamic culture including self-discipline, good manners, respect for elders, and good academic outcomes (Alsheikh, Parameswaran, & Ethoweris, 2010). Muslim parents believe that they must be strict with their children to maintain a high level of control and teach them to value disciplines and social hierarchy. This begs the question if the authoritarian PS in Arab or Islamic cultures has a similar meaning as it does in Chinese cultures, as expressed earlier.

Masud and colleagues (2016) studied the relationship between PS and academic performance with the mediating role of self-efficacy. They found that PS individually had no significant relationship with academic performance, but self-efficacy as a motivational factor mediated the relationship between authoritative PS and academic performance. Another study conducted by Tozandehjani, Tavakolizadeh, and Lagzain (2011) in Iran conveyed that parental authoritativeness significantly affected university students' self-efficacy more than authoritarian and permissive parenting styles. Susanadari (2014) collected data from 151 Indonesian high school students to examine the relationship between several components including PS, self-efficacy, and academic achievement. The findings suggested that authoritative parenting styles have a positive influence on self-efficacy. They also suggested that PS had no influence on academic achievement, yet self-efficacy did influence academic achievement.

Considering other factors of SRL, EbrahimMadahi, Liaghat, and Madah (2013) studied the effect of parenting practices on students' cognitive and metacognitive functions. They found that Iranian parents who were assertive and responsive with their children reported significant correlations with self-regulated learning factors including cognitive and metacognitive processes, which in turn were significant predictors of students' academic achievement. In contrast, other parenting styles including authoritarian, negligent, and exclusive practices were negatively correlated with SRL and academic achievement. A study that was performed in Singapore (Luo, Hogan, Kaur, & Chan, 2013) stressed the importance of parental involvement (a characteristic of authoritativeness) since that facilitates children's learning processes and makes the

processes more adaptive. The study emphasized that this type of parental practices increases students' self-regulated engagement in learning and academic achievement.

In conclusion, despite the differences between studies it is notable that parental authoritativeness appears to be the functional parenting style that positively interacts with students' academic behaviour and outcomes. While the previous research done in Chinese culture revealed that authoritarianism works better with children's academic performance, more recent research in the same culture reported contrary findings that concurred with the majority of results, most likely due to the rapid development of Chinese society. It can be assumed that as globalization increases and people from different societies blend their child rearing techniques, this may contribute to minimizing ethnicity differences in the way of raising a child. A very recent interesting study conducted by Oliveira (2015) showed that ethnicity no longer has a significant role in differentiating the meaning of parenting styles as authoritativeness appears to have a positive influence on children's academic outcomes despite cultural differences. She examined the association between PS and students' academic outcomes and mediated ethnicity, individualism, and collectivism. Results showed that neither ethnicity nor individualism or collectivism were significant mediators between PS and academic outcomes.

2.5. Summary of Review of Related Literature

As most of the research on self-regulated learning and academic achievement has been conducted in school environments, it was important to stress the significance of the family environment for the development of self-regulated academic learning and effective interactions that contribute to improving children's learning outcomes. From the introduced theoretical framework, it was noticed that the majority of the reviews of related literature on PS, different components of SRL, and academic achievement were conducted in developed countries. There was no research investigating these three factors in the Kingdom of Saudi Arabia (KSA). In addition, many of these studies were done among college and university students. Although the reported findings analyzing the association between the variables of PS, SRL, and achievement play a leading role in the literature, it is evident from these studies that inconclusiveness and inconsistency are present and due to the various ethnicities, cultural backgrounds, and socioeconomic

statuses of parents. Thus, there was a need for a study to be conducted in primary schools in the KSA in order to add to the knowledge base surrounding the impact of PS on children's SRL and how that can predict their academic achievement. It was also important to consider how a child's gender can determine parenting styles and how that might relate to students' academic SRL and outcomes. Based on the presented findings from the literature, the following research questions were made:

1. What is the relationship between PS (authoritarian, authoritative, or permissive) and key aspects of SRL (motivation, metacognition, and learning behaviour)?
2. Does PS and SRL jointly predict students' academic achievement?
3. How is gender related to PS, SRL (motivation, metacognition, and learning behaviour) and academic achievement in science?

Chapter 3 Methodology

3.1. Introduction

This chapter describes the methods applied in conducting this research. A cross-sectional survey approach has been chosen to investigate the influence of parenting styles on students' self-regulated learning and how that is reflected in their academic performance in science. Justification of methodology and sampling procedures are described followed by the instrument used for data collection and methods of data analysis. Finally, the limitations of the study are discussed.

3.2. Research Design

This is a quantitative study, which made use of a cross-sectional survey approach to mainly identify correlations between factors in parenting styles and children's self-regulated learning. A cross-sectional survey design was adopted because it helps researchers to obtain information on behavioural and social variables to identify significant relationships between certain components. Notably, the use for this methodology to investigate relationships between different parenting styles and components of self-regulated learning has been recognised (e.g. Moilanen, Rasmussen, & Padilla-Walker, 2015; Abar, Carter, Winsler, 2009; Erden, & Uredi, 2008; Aunola, Stattin, & Nurmi, 2000). For these reasons, the researcher utilised a survey design and adapted two survey instruments to assess the perceptions of a selected sample of students and their mothers regarding PS and SRL across the east of Saudi Arabia.

3.2.1. Questionnaire

The researcher used two self-administered questionnaires for data collection. All questionnaires consisted of close-ended questions that provided multiple-choice response options. Questionnaires were selected as a research instrument because a researcher could obtain larger amounts of information from more participants than alternative methods. Furthermore, this method ensured a wide coverage of sample in the shortest possible time. An advantage of utilising questionnaire as a data collection tool is that it allows researchers to obtain facts and opinions because it is a versatile and flexible method that is frequently used to assess contemporary phenomena (Popper, 2005). Furthermore, using

questionnaires can ensure confidentiality and anonymity for participants, which increases the honesty when providing their answers. Although questionnaire is a functional tool for collecting data, it has some disadvantages that have to be considered when conducting this research.

Some of the drawbacks that questionnaire method might have are dishonesty and non-conscientious responses. Assuring respondents' privacy of personal identification would encourage them to be more truthful in their answers. Additionally, making surveys relatively short and less complex assists researchers to get well thought out responses (Marshall, 2005). Webb (2000) declared that creating short and focused questions also helps individuals to have the same interpretation of the questions and avoids skewed results. Another disadvantage is the method of distribution or administration of the questionnaire that the researcher undertakes. Questionnaires can be done by face-to-face interviews or can be self-administered, involving distribution by email, online, post, telephone, or personal contact. According to Marshall (2005), a low response rate is an issue that is often associated with self-administered questionnaire; thus, handing out the questionnaire personally to the participants makes them connect it with an individual or organisation, which in turn increases the response rate.

The final decision of choosing questionnaire as a data collection method was mainly influenced by time, effort, and financial constraints, as well as logistics. For example, the implementation of an interview or focus group method would not have been more practical for the participants or the researcher due to resource and time constraints. Moreover, the issue of low rate response was avoided in this study as the questionnaires were distributed by the researcher and her assistant to the largest possible sample they could have. Students were asked to take questionnaires home for their mothers and we visited the schools several times to collect the rest from those who forgot to bring them back in the first day of collection.

3.3. Sampling

A convenience sampling method was employed in this research study. The research population for this study comprised all fifth and sixth graders with their mothers. Seven

primary school principals (from four female schools and three male schools) in three different cities (Dammam, Jubail, Industrial Jubail) in the Sharqia region of Saudi Arabia were asked for permission to approach children and parents in their schools. The number approached from those schools was 860 pupils (510 females, 350 males; 11−12 years old). After scrutinizing collected envelops, around 250 students (29%) did not hand the envelopes back and 94 (11%) students and their mothers did not fill in the questionnaires. Then, 516 mothers (60% of the approached sample) have agreed to take part in this study as they and their child have signed the consent form included in the envelope. From the 516 handed envelopes, there were around 165 envelopes (19%) excluded from this study because some of them were without names, some students' names were not found in the class lists, some questionnaires had the same rating point for all items, and some of the mother's questionnaires were either with no answers or had answers that clearly (based on their handwriting) were provided by the child. Therefore, from the whole approached sample, only 351 (41%) students and their mothers were included in this study: 218 females represented 62% and 133 males represented 38% of the actual sample.

3.3.1. Procedures

After receiving approval from the Education Administration in Sharqia (Planning and Development Department) and getting the seven school principals permission to conduct the study, the researcher and her assistant distributed the envelopes on the first day of their visit. Before the administration process, students were provided with some explanation about the researcher, aims of the study, and what procedures they should do. Envelopes then were distributed and the students were asked to take the envelope home and hand to their mothers for completion. Each envelope contained a copy of a letter introducing the researcher, an information sheet, a consent form for the mother and child, a questionnaire for mothers concerning their parenting styles, and a questionnaire for students concerning their motivation and use of learning strategies. A day later, the researcher and her assistant collected the envelopes from students. As many students had forgotten to bring them back in the first day of collection, we visited the schools again for another collection.

3.4. Ethics

Approval to conduct this research was received from the Social and Behavioural Research Ethics Committee (SBREC) of Flinders University in South Australia (See Appendix I). Permissions from school principals then were obtained. Participating in this study was completely voluntary as an information sheet and a consent form were provided to all participants. Participation was also confidential because all questionnaires were inside an envelope and no one knew which students returned completed forms as incomplete forms were also returned in the envelopes provided.

3.5. Measurements

This study used two questionnaires, the Parenting Style Questionnaire (Robinson, Mandleco, Olsen, & Hart, 1995) and the Motivated Strategies for Learning Questionnaire (Pintrich, Smith, Garcia, & McKeachie, 1991) to measure two major constructs. All these questionnaires were translated to Arabic and a signed copy of the Translation Accuracy Certification was provided to the Social and Behavioral Research Ethics Committee (SBREC) in Australia. The only demographic information obtained from the participants was their names to identify each of them in the class mark books that included students' science scores. Students' gender was determined based on the schools in which the questionnaires were distributed, as well as using their science transcripts.

3.5.1. Parenting Style Questionnaire

The Parenting Style Questionnaire (PSQ) was developed by Robinson, Mandleco, Olsen, and Hart (1995) to measure parenting style that are predominantly utilised when rearing children. This instrument was especially designed for parents of preadolescent children who may not assess their parents' practices accurately. The original PSQ consists of 62 items as the Authoritative scale has 27 items with a Cronbach α of .91, the Authoritarian scale has 20 items with a Cronbach α of .86, and the Permissive scale has 15 items with a Cronbach α of .75. For the questionnaire used in this study, the number of items were reduced to only 30 items that reflect the three identified parenting styles. The Authoritarian style had 13 items (e.g. 'I use threats as a form of punishment with little or no justification'). The Authoritative style had 13 items (e.g. 'I am responsive to my

child's feelings and needs'). The Permissive style had 4 items (e.g. 'I find it difficult to discipline my child'), (See Appendix I – d for the PSQ). This adaption was followed according to its high validity and reliability values that were determined in previous research. For example, Moghadam, Hemmatinezhad, Behrozi, and Ahmadzade (2014) administered the adapted instrument of PSQ to 704 students (14 to 17 year-olds) with a reported reliability indicated a Cronbach α value of .83. A six-point Likert scale that ranges from 1= never to 6= always is used for all items.

Table 1 The Parenting Style Questionnaire (PSQ)

Sub-scale	Item
Authoritative	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Authoritarian	14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26
Permissive	27, 28, 29, 30

All the items in the scale adapted six point Likert scale: Never (1), rarely (2), occasionally/sometimes (3), often (4), very often (5), always (6).

3.5.2. Motivated Strategies for Learning Questionnaire

The Motivated Strategies for Learning Questionnaire (MSLQ) is a self-report instrument that was designed by Pintrich, Smith, Garcia, and McKeachie (1991) to assess students' motivation and use of self-regulated learning strategies. The latest version of the MSLQ has 81 items that are rated on a 7-point Likert scale that ranges from 1= not at all true of me to 7= very true of me. This instrument is composed of two sections, focusing on motivation and the use of strategies. The motivation section measures learners' values (extrinsic and intrinsic goal orientation and value), affective beliefs (test anxiety), expectancies (control of self-efficacy for learning and performance, learning beliefs). The strategy use section evaluates cognitive and metacognitive strategies (elaboration, rehearsal, organisation, metacognitive, critical thinking, and self-regulation) and management strategies (effort regulation, time and study environment, peer and learning help seeking). This questionnaire was designed for college students; however, it has been used successfully with children and is judged to be a suitable instrument for assessing their SRL (Karadeniz et al., 2008; Eshel & Kohavi, 2003; Andreou & Metallidou, 2004;

Shih, 2005).

To make this instrument even more appropriate for children, the questionnaire was adapted as some factors were excluded and fewer items were included from each sub-construct. The adapted questionnaire used in this study then consisted of: (a) task value (6 items) and self-efficacy (4 items) to measure the component of motivation, (b) strategy use (9 items) and metacognitive self-regulation (7 items) to measure metacognitive processes, (c) time and study management (5 items) and help seeking (4 items) to measure management component. A few items were simplified when they were translated to Arabic to help children better interpret what they read. Shortening and adapting the MSLQ to fit younger participants are considered more successful by the instrument's author and other researchers (e.g., Wolters & Pintrich, 2001; Shih, 2005). The main aim of making the MSLQ shorter and with more focused questions was to increase the response rate and encourage respondents to answer all questions conscientiously with consistent understanding of the statements.

The researcher then examined the items and rating points of the scale on two 11 year-old children. Statements were found relatively understandable but each rating point in the scale was given a name to assist children to rate themselves more accurately since the midpoints numbers were confusing (e.g., 2 = untrue of me, 3 = somewhat untrue of me). According to Saris and Gallhofer (2007), a survey questionnaire that is too long and has complex questions with some age-irrelevant terms, as well as inappropriate or confusing response options might lead to less efficient answers and decrease children's persistency in completing the questionnaire. Examples of the questions included in the instrument are 'I prefer class work that is challenging so I can learn new things' and 'It is important for me to learn what is being taught in this class' (See Appendix I – c).

Table 2 The Motivated Strategies for Learning Questionnaire

Sub-scale	Factor	Item
Motivation	Task Value	1, 2, 3, 4, 5, 6,
	Self-efficacy	7, 8, 9, 10
Metacognition	Cognitive and Metacognitive	11, 12, 13, 14, 15, 16, 17, 18,
	Strategy Use	19
	Metacognitive Self-regulation	20, 21, 22, 23, 24, 25, 26
Resource	Time and Study Management	27, 28, 29, 30, 31
Management	Help Seeking	32, 33, 34, 35

All the items in the scale adapted seven-point Likert scale: Very untrue of me (1), untrue of me (2), somewhat untrue of me (3), neutral (4), somewhat true of men (5), true of me (6), very true of me (6).

3.5.3. Student Achievement

Students' science achievement scores were obtained from school principals. As the MSLQ used to measure SRL in the study has to be related to a specific domain for accuracy and reliability of the results, students' academic achievement construct was measured by the mean of the last year's science scores for grades 5 and 6. In addition, Science was specifically chosen due to the abundant previous research that was found on components of SRL (e.g., Neber & Schommer-Aikins, 2002; Eilam, Zeidner, & Aharon, 2009). Students are assessed by four levels of achievement, which are 'Excellent' (95% – 100%), 'Very Good' (85% – 94%), 'Good' (75% – 84%), 'Fail' (below 75%). However, the 'Fail' category was filtered out from the data analysis procedures because there were only four students received a 'Fail' grade.

3.6. Data Analysis

The collected data was entered into a Statistical Package for the Social Sciences (SPSS) to find out the significant relationships between PS, components of SRL, and academic achievement. A structural Equation Modeling (SEM) approach was perhaps the optimum way to proceed, but the short period of time and the measures used in this study did not warrant this. Therefore, several descriptive statistics analysis was undertaken as the first

step of interpreting the data for all investigated variables. An Independent Samples t-test was conducted to examine gender differences in respect to PS variables. Correlation coefficients and Multiple Regression Model were computed to determine any relationships between PS and SRL factors. Finally, the One-Way Analysis of Variance (ANOVA) was used to explore which variables of the PS and SRL are predictors of academic achievement.

3.7. Missing Data

In the present study, there was less than 2% missing data in all investigated variables. Due to the small percentage of missing data, it deemed unnecessary to use any missing data substitution techniques such as mean substitution and multiple imputation.

3.8. Limitations

The present study had some limitations that might have had some effects on the findings. As there was only one data collection used due to time constraints, that "may include participant blind spots and desire to satisfy the researcher" (Askell-Williams & Lawson, 2015b, p. 262), which in turn leads to more non-conscientious responses and inaccurate results. In addition, the students were asked to take their questionnaire home for completion. Therefore, some of the parents might have answered the questions instead of their children. The same might have happened with the mother questionnaire as that was clearly seen through some hand writing styles and inconsistent answers that some PSQs were completed by the child.

Even though the researcher attempted to control this issue through excluding those questionnaires, some might have not been discoverable. More importantly, most primary schools' principals indicated that teachers are very generous when they assess students' academic achievement because most of them get above 95% easily and students in primary schools rarely fail in a subject. One principal stated that our focus is not on scores but on habilitation and preparing students for the secondary grades. That might have not been very helpful in providing the researcher with precise relationships between academic achievement and other factors investigated in this study. In addition, the SEM was going to be more appropriate for data analysis in this study, and performing this model would

have contributed to more accurate relationships between variables.

Chapter 4 Findings

4.1. Introduction

The current study aimed at investigating the correlations between aspects of parenting styles (PS), Self-regulated Learning (SRL), and academic achievement. This chapter outlines the validity and reliability analysis of each questionnaire's sub-scale administered in the study. Subsequently, three stages of analysing the data are presented to answer each research question (parenting style and gender, relationships between PS and SRL, predictors of academic achievement).

4.2. Descriptive Statistics and Analysis for Construct Validity and Reliability

Descriptive statistics with the correlations of each scale on both questionnaires' factors were run. A principal component factor analysis was then conducted on all scales to examine their validity. Items with loadings less than 0.4 on the relevant components were not considered as contributing to that component. To explain the correlations between items and appropriateness of sampling, Bartlett's Test of Sphericity was undertaken, and the value of Kaiser Meyer Olkin (KMO) was also obtained for each sub-scale to examine the suitability of data for factor analysis. In addition, A Cronbach α was calculated for each component to examine if the items were internally consistent, stable, and homogenous.

4.2.1. Analysis of the MSLQ

The descriptive statistics of the MSLQ subscales are displayed in Table 3. Among the six factors, strategy use was scored the most positively by students ($M = 44.8$) while help-seeking scored the lowest ($M = 21.6$). As some correlations appeared between items in each component, some factor analysis with the Cronbach's alpha was undertaken.

Table 3. Correlations and Descriptive Statistics of MSLQ

	TV	SE	CMSU	MSR	TSM	HS
TV	----					
SE	.59	----				
CMSU	.54	.54	----			
MSR	.49	.50	.77	----		
TSM	.41	.46	.51	.51	----	
HS	.16	.12	.28	.34	.38	
M	33.3	22.4	44.8	35.9	28.6	21.6
SD	5.3	3.9	9.3	7.5	4.6	4.2

Task value (TV), self-efficacy (SE), cognitive and metacognitive strategy use (CMSU), metacognitive self-regulation (MSR), time and study management (TSM), help seeking (HS)

Table 4 shows the validity and reliability analysis of the subscales of MSLQ. It was indicated that all subscales' items were suitable for data analysis because the KMO of all factors were higher than .70 with the exception of the help-seeking factor (.65), which is considered marginally acceptable by Hutcheson and Sofroniou (1999). Results also revealed that all components' items had moderate to high factor loading values ($.57 - .81$) except one item, which was .43 (See Appendix II – b for the items' loadings). In addition, Bartlett's Test for all components was significant ($p<.001$). This illustrates that there is some degree of correlation between items. From the internal consistency estimates of reliability presented in Table 3, Cronbach's alpha coefficients of all scales were above .750 with the exception of the time and study management factor (.66) and help-seeking factor (.64).

Table 4. Validity and Reliability Analysis of MSLQ

Sub-Scale	Factor	Item	KMO	Bartlett's Test	Cronbach's alpha
Motivation	Task value	6	.810	426.452	.754
	Self-efficacy	4	.777	410.719	.796
Metacognition	Cognitive and Metacognitive strategies	9	.877	777.778	.822
	Metacognitive self-regulation	7	.859	701.031	.822
Resource Management	Time and study environment	5	.719	264.974	.664
	Help-seeking	4	.652	185.857	.641

4.2.2. Analysis of the PSQ

For the PSQ, the descriptive statistics shown in Table 5 indicated that the authoritative PS factor was assessed the most positively by mothers ($M = 65.1$), and the permissive PS factor obtained the lowest score ($M = 7.4$). Although the results showed that there is some degree of correlations between items under each sub-scale, the PSQ has not worked as it was exactly expected in the Saudi context because the authoritarian and permissive PSs had to be refined.

Table 5. Correlations and Descriptive Statistics of PSQ

	Authoritative	**Authoritarian**	**Permissive**
Authoritative	----		
Authoritarian	.00	----	
Permissive	.22	.44	
M	65.1	41.2	7.4
SD	11.04	10.72	3.08

After running the factor analysis on the three factors of PSQ, the authoritative PS scale was suitable for analysis as the KMO was .92 and Bartlett's Test reached a significant level (See Table 5). However, the authoritarian PS was also suitable for data analysis with a KMO of .78, but it appeared to have two interpretable factors. The first factor items were clearly about punishing the child and the other factor items were more about being an authority figure. Like many researchers in developmental psychology, Legault, Ray, Hudgins, Pelosi, and Shannon (2016), for example, stated that "authoritarian parents tend to be autocratic and value unquestioning obedience. They use punishment to control their children behavior and discourage reciprocal dialogue" (p. 22). As there is a clear justification for the two factors being part of an authoritarian PS, the two components were forced into a single-factor solution. One item was removed from the subscale due to its low loading value (.31). For the permissive PS sub-scale, there were two factors shown. The second factor with 1 item was removed and three items remained for this sub-scale (See Appendix II – a for the items' loadings). Furthermore, it can be said that the KMO measure verified the sampling adequacy for the analysis, $KMO = .54$ ('miserable' according to Hutcheson & Sofroniou, 1999).

The results of reliability analysis introduced in Table 6 show that the first two subscales (authoritative and authoritarian) had acceptable internal consistency and their values of Cronbach's α were higher than .75 while the permissive PS subscale was .39. As a value below .6 is unacceptable since it is an indication of an unreliable scale, Field (2014) argues that when dealing with psychological factors, getting low values are expected due to the diversity of the constructs being measured. He also discussed that having a high value of α does not necessarily mean that the scale is reliable as it may refer to the increased number of items that are included in the scale. As the permissive PS has only 3 items, that could be the reason for getting a low value of α for this construct.

Table 6. Validity and Reliability Analysis of PS

Sub-Scale	Item	KMO	Bartlett's Test	Cronbach's alpha
Authoritative	13	.920	1517.790	.887
Authoritarian	13	.784	807.787	.770
Permissive	4	.549	42.413	.397

4.3. Study Results

The present study findings are divided into three stages. The first stage considers the type of PS that is commonly used by Saudi mothers; in addition, it considers differences in gender in each investigated variable of PS. The second stage concentrates on relationships between PS and components of SRL. Lastly, stage three in the findings explores weather factors of PS and SRL predicts students' academic achievement.

4.3.1. PS and Child Gender

Before determining that if there is a difference in the way that mothers treat their children depending on their child gender, descriptive statistics were obtained to first identify which of the PSs is more commonly implemented by Saudi mothers and to get a preliminary idea about the differences in child gender. Then, An independent Sample T-test was computed to see if the difference in PS by child gender is significant.

Table 7 shows the means and standard deviations of the three types of parenting styles: authoritative, authoritarian, and permissive. These descriptive statistics provide

data about how broadly each type of PS is used by mothers in the Saudi context. In addition, Table 8 presents more descriptive statistics to find any differences in the three parenting styles that were used with the female and male children.

Table 7 Descriptive Statistics of PS

Scale	N	M	SD
Permissive PS	349	2.48	1.02
Authoritarian PS	351	3.51	.86
Authoritative PS	351	5.04	.83

Unexpectedly, the descriptive statistics reflected that the Saudi mothers perceived themselves as more inclined towards the authoritative PS ($M = 5.04, SD = .83$) than the authoritarian or the permissive PS. As this finding is the opposite of what was claimed in the literature about Saudi parents that they are authoritarian, it can be said that similar findings that have appeared in Chinese studies due to the economical and social development of the country that might have also occurred in the Saudi culture.

Table 8 Descriptive Statistics of Gender in PS

Gender		Permissive	Authoritarian	Authoritative
Male	M	2.44	3.61	5.06
	SD	1.02	.84	.82
	N	132	133	133
Female	M	2.50	3.44	5.03
	SD	1.02	.86	.83
	N	217	218	218
Total	M	2.48	3.51	5.04
	SD	1.02	.86	,83
	N	349	351	351

For the descriptive statistics in Table 8, the data indicated that there were no differences in the authoritative and permissive PS between female and male children. Conversely, on average, there was a slight difference in the authoritarian PS as mothers appeared to be more authoritarian with their sons ($M = 3.61, SD = .84$) than with their daughters ($M = 3.44, SD = .86$). This difference, 95% CI $[-.063, .391]$, was not

significant $t(317) = 1.39, p = 163$ and it represented only a small-sized effect, Cohen's $d = 0.2$.

4.3.2. Relationship between PS and SRL

To examine the strength of the linear relationship between PS and SRL, Pearson correlations and Multiple Regression Model were computed between the sub-constructs of MSLQ (task value, self-efficacy, cognitive and metacognitive strategy use, metacognitive self-regulation, time and study management, help-seeking) and PSQ (authoritative, authoritarian, permissive).

4.3.2.1. Person Correlations

The results of the correlation analysis between the variables are presented in Table 9. Correlation coefficients were useful to use because they give initial ideas about if the correlations are weak or strong and if they have a positive or negative direction of the relationship.

Table 9 Pearson Correlation Analysis between PS and SRL Variables

	SE	TV	SU	MSR	T&SM	HS
Authoritative	.176**	.083	.110*	.077	.156**	.062
Authoritarian	-.136*	-.123*	-.055	-.059	-.176**	.069
Permissive	-.180**	-.112*	-.078	-.128*	-.163**	-.024

* Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)

As expected, correlation coefficients of authoritative PS and their children's SRL (rs ranged from .05 to .17) showed that students' scores on SRL correlated with authoritative PS in a positive direction. In contrast, the scores of authoritarian and permissive PSs had a negative relationship with children's SRL (rs ranged from -.02 to -.18) except help-seeking as it was positively but not significantly correlated to authoritarian PS ($r = .06$). This could be a consequence of the low reliability of the help-seeking measure (Cronbach's alpha = .64) since low reliability of the measure leads to attenuation of the correlation with other variables (Field, 2014).

For further illustration, even though all correlations were relatively weak, self-efficacy and time and study management had the strongest positive relationship with

authoritative PS (.17 and .16, respectively) and the strongest negative relationship with authoritarian (-.13 and -.17) and permissive PS (-.18 and -.16). The low reliability of help-seeking measure might have affected its level of correlations with other variables being measured; it appeared to have non-significant relationship with any of the PSs. For the task value variable, it was not significantly related to authoritative PS but significantly related to authoritarian and permissive PS. On the other hand, strategy use was significantly related to authoritative PS but not significantly related to authoritarian and permissive PS. Finally, Metacognitive self-regulation appeared to have a significant relationship solely with permissive PS. To conclude, although there are some significant correlations between PS and some variables of SRL, self-efficacy and time and study management played the most dynamic role in their positive and negative correlations with the three types of PS.

4.3.2.2. Multiple Regression Model

A Multiple Regression Model was performed for each SRL sub-scale to look at its influences with each PS and gender net of other predictor variables. Table 10 shows the *slope* parameters, *Beta,* and the significance level of each variable of the PS and gender in regard to their unique relationship to each factor in the SRL.

Table 10 Mutable Regressions of PS and Gender in SRL Factors

SRL	Authoritative			Authoritarian			Permissive			Gender		
sub-scale	B	*β*	*P*	B	*β*	*P*	B	*β*	*P*	B	*β*	*p*
TV	.44	.06	.214	-.41	-.06	.256	-.31	-.06	.303	1.37	.12	.020
SE	.72	.15	.004	-.35	-.07	.172	-.43	-.11	.049	1.21	.15	.004
CMSU	1.39	.12	.024	-.09	-.00	.885	-.44	-.04	.416	4.30	.22	.000
MSR	.51	.05	.301	.30	.58	.557	-.92	-.12	.036	3.95	.25	.000
TSM	.70	.13	.011	-.51	-.10	.072	-.39	-.09	.104	1.24	.14	.008
HS	.42	.08	.127	.51	.10	.073	-.18	-.04	.443	.89	.10	.058

Task value (TV), self-efficacy (SE), cognitive and metacognitive strategy use (CMSU), metacognitive self-regulation (MSR), time and study management (TSM), help seeking (HS)

To begin with, the regression model showed that PS was only a significant predictor of students' self-efficacy and time and study management. Self-efficacy, cognitive and metacognitive strategy use, metacognitive self-regulation, and time and study management were significantly predicted by PS. Authoritative PS significantly predicted students' self-efficacy, cognitive and metacognitive strategy use, and time and study management. For each unit increase in the authoritative PS there was an increase in these three components of SRL in students (.729, 1.39, .703, respectively). As PS was considered as a factor that could possibly predict students' SRL, it is also important to take into account the child gender as another predictor of SRL. In contrast, permissive PS was a significant predictor of students' self-efficacy and metacognitive self-regulation, and it meant that in each increase of unit in the permissive PS there was a decrease in these two factors of SRL in students (-.433, -.923, respectively). Surprisingly, the authoritarian PS was not a significant predictor of any of the SRL factors. Moreover, task value and help seeking were the only SRL factors that were not significantly predicted by any of the PS ($p > .05$).

Child Gender was included as a fourth factor that was added to the components of PS in the regression model. Results indicated that child gender was a significant predictor of all SRL factors, and again with the exception of help-seeking factor as the level of significance was less than .05. Additionally, the $slope$ parameters in the regression model showed that girls were more self-regulated learning than boys since they scored significantly higher in all five factors of SRL as the B of task value$= 1.376$, self-efficacy $= 1.213$, cognitive and metacognitive strategy use $= 4.308$, metacognitive self-regulation 3.953, time and study management $= 1.248$.

4.3.3. PS and SRL as predictors of academic achievement

Before exploring PS and SRL as predictors of students' academic achievement, it is worthwhile to summaries students' academic achievement and to also see if there is a difference between males and females. Table 11 presents the frequency and percentage of each category of the academic achievement, which are 'Excellent' ($95\% - 100\%$), 'Very Good' ($85\% - 95\%$), and 'Good' ($75\% - 85\%$).

Table 11 Descriptive Statistics for Academic Achievement Categories

		Frequency	Per cent
Valid	Excellent (95%-100%)	234	67
	Very good (85%-95%)	86	25
	Good (75%-85%)	27	7
	Fail (bellow 75%)	4	1
	Total	351	100.0

From the data presented in Table 11, it can be clearly seen that the majority of students achieved 'Excellent' grade (67%), while the minority of them got 'Very Good' and 'Good' grades. In additions, the Independent Samples t-test showed that there is no significant difference in means between males and females in science achievement (p> .05). This finding does not support the findings presented in previous studies highlighted in the literature review of this study. An explanation of this could be the high proportion of students who scored between 95% and 100% is worthy of comment. Indeed, primary students in Saudi Arabia are pushed with higher grades than they fairly deserve. Thus, it is crucial to consider that the finding of the relationship between academic achievement and other investigated factors in this study may not be precise because of the truncated and skewed distribution of grades.

To find out if the mothers' parenting style and the components of SRL can predict children's academic achievement, the raw scores of the variables were used to generate descriptive statistics for each factor. Table 12 shows the means and standard deviations of PS and SRL components for each category of the academic achievement. The descriptive statistics are presented to reveal any differences between students' levels of achievement regarding the factors of PS and SRL.

Table 12 Descriptive Statistics of PS and SRL in Academic Achievement

Scale			Academic Achievement		
			95% – 100%	85% – 95%	75% – 85%
Parenting Style	Authoritative	*M*	5.06	5.01	4.98
		SD	.84	.82	.71
	Authoritarian	*M*	3.46	3.59	3.58
		SD	.85	.94	.75
	Permissive	*M*	2.14	2.68	2.39
		SD	1.02	1.02	.99
Self-regulated Learning	TV	*M*	34.53	31.60	30.22
		SD	4.74	5.64	6.47
	SE	*M*	23.28	21.08	20.74
		SD	3.34	4.05	5.72
	CMSU	*M*	46.68	42.20	38.29
		SD	9.01	9.62	7.79
	MSR	*M*	37.54	33.57	30.37
		SD	7.35	4.43	5.38
	TSM	*M*	29.78	27.37	26.25
		SD	3.80	4.43	5.38
	HS	*M*	22.30	20.69	20.74
		SD	3.99	4.48	4.40

Task value (TV), self-efficacy (SE), cognitive and metacognitive strategy use (CMSU), metacognitive self-regulation (MSR), time and study management (TSM), help seeking (HS)

Considering the differences between students' academic achievement in science with the influence of PS factors, it can be noticed that there are no major differences between the means. Nevertheless, even with the slight differences found between the means, the number of 'Excellent' and 'Very Good' students seemed be higher with the authoritative PS ($M = 5.06, 5.01, SD = .84, .82$, respectively) than the number of student

with 'Good' grades ($M = 4.98, SD = .71$). For the authoritarian and permissive PSs, the means were almost the same between all three categories of academic achievement. However, the differences of the decimal points between the categories conveyed that these PSs could influence students' academic achievement in a negative direction because more students in 'Very Good' and 'Good' grades are associated with these two types of PS.

In the case of SRL, the descriptive statistics showed that the factors of SRL play a role in students' level of academic achievement. Generally, students who achieved higher scores in science were more self-regulated learners than those who achieved lower scores as they implemented more motivational, metacognitive, and behavioural processes in their studies. More importantly, the differences in means between the three categories of academic achievement were stronger in the metacognitive components (cognitive and metacognitive strategy use and metacognitive self-regulation). It means that the metacognitive processes appeared to have a more practical influence on primary students' academic outcomes than the motivational and behavioural factors. Therefore, the majority of students who achieved 'Excellent' grades used more cognitive and metacognitive strategies ($M = 46.68, SD = 9.01$) as well as they were more metacognitively self-regulated ($M = 37.54, SD = 7.35$) than those who got 'Very good' or 'Good' grades (for strategy use $M = 42.20, 38.29, SD = 9.62, 7.79$, and for metacognitive self-regulation $M = 33.57, 30.37, SD = 7.28, 7.02$, respectively). This finding is consistent with Baumrind (1967) and does not support the assumption that young children are not capable of metacognition (Bruning et al., 2011).

To identify that if the differences of means found between the three categories of academic achievement in respect of PS and SRL were significant, a One-Way ANOVA was performed (See Table 13).

Table 13 One-Way ANOVA for PS and SRL in Academic Achievement

Scale	Achievement	Sum of Squares	*Df*	Mean Square	F	Sig.
Authoritative	Between Groups	.29	3	.09	.09	.661
	Within Group	328.70	325	1.01		
	Total	328.98	328			
Authoritarian	Between Groups	1.97	3	.65	.65	.580
	Within Group	333.94	332	1.0		
	Total	335.92	335			
Permissive	Between Groups	4.76	3	1.58	1.59	.191
	Within Group	342.21	343	.99		
	Total	346.97	346			
TV	Between Groups	30.19	3	10.06	10.90	.000
	Within Group	315.60	342	.93		
	Total	345.79	345			
SE	Between Groups	26.78	3	8.92	9.56	.000
	Within Group	319.09	342	.93		
	Total	345.88	345			
CMSU	Between Groups	27.88	3	9.29	10.01	.000
	Within Group	310.11	334	.928		
	Total	337.99	337			
MSR	Between Groups	32.51	3	10.83	11.83	.000
	Within Group	310.47	339	.916		
	Total	342.99	342			
TSM	Between Groups	34.66	3	11.55	12.70	.000
	Within Group	309.31	340	.910		
	Total	343.97	343			
HS	Between Groups	11.10	3	3.70	3.78	.011
	Within Group	331.46	339	.978		
	Total	342.57	342			

It is notable that as there were no perceptible differences in the means of the three categories of academic achievement in regard of PSs, the data in Table 9 confirmed that mothers parenting did not directly and significantly influence the academic achievement. On the other hand, the influence of SRL factors on children's academic achievement significant (for all factors $p < .05$). Moreover, it can be noticed that help-seeking was the least significant factor in its effect on the academic achievement $F(3, 339) = 3.78, p = .011$, and as it was mentioned above this could be caused by the low reliability of the scale. As the One-Way ANOVA showed some effects of SRL on students' academic achievement, the post hoc Tukey test was undertaken to discover which one of the academic achievement categories is different from one another (where that the significant differences among academic achievement categories).

The test illustrates that there are some significant differences between the mean scores of academic achievement categories. First of all, for task value, self-efficacy, and time and study management, the mean score of students who had 'Excellent' grade was significantly different from those who had 'Good' or 'Very Good' grade. In case of metacognitive self-regulation and cognitive and metacognitive strategy use, all three categories of academic achievement significantly differed from one another. Finally, as there was no difference in the mean scores of academic achievement categories in regard to help seeking, the post-hoc Tukey did not indicate any significant difference between the categories.

4.4. Summary

The data was analysed through three stages: PS and child gender, relationship between PS and SRL, PS and SRL as predictors of academic achievement. Stage 1 showed that mothers appeared to be more authoritative with their children, and there was no significant difference in PS by child gender. Stage 2 revealed that authoritative PSs are positively and significantly associated with self-efficacy, cognitive and metacognitive strategy use, and time and study management. In contrast, permissive PSs were significantly but negatively correlated with self-efficacy and metacognitive self-regulation. The last stage of the analysis showed that there is no significant difference between males and females in academic achievement. Furthermore, PS did not predict

students' achievement, while SRL components were found to be significant predictors. Figure 1 indicates the significant relationships found during the three stages of the data analysis. As it was not possible to run a path model to get the standardised coefficients for all factors relationships, merely the positive and negative signs were shown in the diagram.

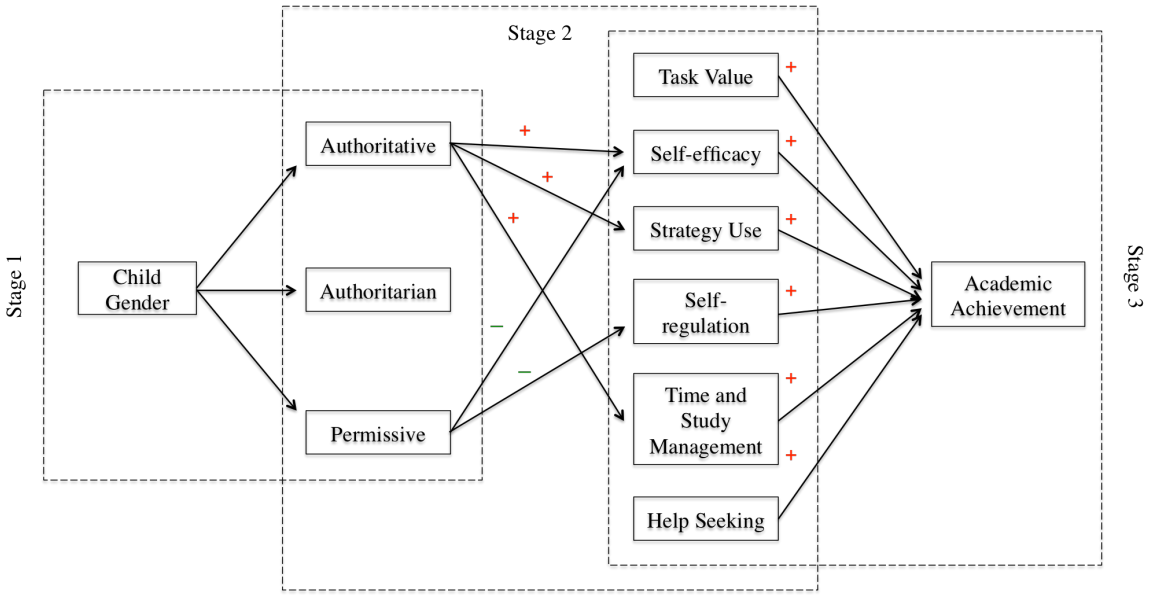

Figure 1 *Significant Relationships Determined during Interpreting the Data of the Three Stages of Analysis*

Chapter 5 Discussion and Conclusion

5.1. Introduction

The main purpose of the present study was to determine whether PS is associated with primary school students' SRL and academic achievement in Saudi Arabia. This chapter discusses the three stages of the study results in relation to the theoretical framework introduced in the literature. Some recommendations for policy are provided in each stage depending on the applicability. A conclusion and implications for future research are then introduced.

5.2. Parenting Style and Child Gender

The results in Table 6 illustrated that Saudi mothers tend to be authoritative with their children. The fact that Saudi mothers perceive themselves as authoritative than authoritarian is a departure from the literature. In previous studies, Saudi parents appeared to be authoritarian and use controlling and restrictive child-rearing strategies (Dwairy et al., 2006; Achoui, 2003). Moreover, these studies stated that there is a difference in the way of rearing female and male children in Saudi Arabia as parents appeared to be more authoritarian with their sons than their daughters, whereas the results of this study did not support the outcome of these studies because there was no significant difference in PS by gender. There are some key points that could be considered as the reason for such contrary findings.

As the last study that came up with these findings was published 10 years ago, the social and economic growth as well as the massive movement in education and family structure in Saudi societies since that time could have played a substantial role in changing the way of rearing children in Saudi Arabia. From the reviewed literature, it can be seen that the same has happened with the Chinese cultures as there was a difference in the findings between old and more recent studies when they found that Chinese parents are authoritative but not authoritarian as old studies reported (Kelley, 2004; Huang & Prochner, 2003). The authors of these studies also assumed that the tremendous changes that the Chinese societies undergone with might have influenced Chinese child-rearing

ideologies. Huang and Prochner (2003) stated that because internationalisation is becoming an inescapable trend, parental practices "are shaped by the influence of modern trends and the inducement of the media" (p. 235). As the data of this study was gathered from one county in Saudi Arabia that might be different from previous studies, it is necessary to mention that even though Saudi Arabia is considered as a religious country with standardised Islamic rules, it varies in its traditions and norms according to the region to which they belong. In addition, there are some parts of the country where people have higher education than in others.

Furthermore, as this study included children's mothers only, it can be said that the higher level of authoritarianism in previous research may refer more to the fathers rearing practices for their children rather than mothers'. In addition to this, mothers usually align themselves more with guidance and training to raise their children in the appropriate way that ensures their developmental health and needs. Then, as mothers tend to acquire more acquaintance with child-rearing techniques, the greater educational attainment and PS that have been emerged in recent years could have led to mothers developing greater knowledge of child rearing practices and potentially contributed to the findings in this study. This assumption is plausible because higher levels of education encourage parents to concentrate more on their children's needs, so that they have a better comprehension of their children's behaviours and abilities from a 'child-centred' perspective (Huang & Prochner, 2003). These studies also recommend parents to follow moderate-power parenting strategy and use more reasonable guidance when instructing the child. Thus, Saudi mothers might have possibly realised the importance of PS for their children's development through their studies.

5.3. Relationship between PS and SRL

The present study findings revealed that PS does influence primary students' self-efficacy, metacognitive and cognitive strategy use, metacognitive self-regulation, time and study management to a significant degree. Particularly, authoritative PS appeared to have a significant positive relationship with students' self-efficacy, cognitive and metacognitive strategy use, and time and study management. In contrast, permissive PS

found to be significantly but negatively correlated with self-efficacy and metacognitive self-regulation. These findings supported the hypotheses of the study about the authoritative and permissive PS. Previous research has not found the relationships between PS and SRL on Saudi students. However, the patterns of these correlations were expected in light of the diversity of the literature on this field. Therefore, mothers who were perceived to emphasise autonomy, place less emphasis on strict obedience, and explain rules were more likely to have students with higher SRL than those of permissiveness, as previous studies stated (Gonzalez, Holbein, & Quilter, 2002). According to Daniel, Wang, and Berthelsen (2016); Grolnick and Ryan (1989), parents who tend to foster autonomy assist to prepare their children for an academic environment that requires learning techniques like self-regulated learning strategies.

Consequently, parenting style failed to correspond with the forgoing studies that explored the existence of the significant correlation between PS and task value, cognitive and metacognitive strategy use, and help seeking. Conclusions beyond this are unjustified due to the lack of conducted research in similar cultures such as those of Saudi societies'. Nevertheless, the measures used in this study should be assessed and redeveloped to ensure their validity and reliability for the Saudi context. As the findings in this study revealed, SRL is a decisive implement for primary school students to improve their academic outcomes, it was constructive to explore the difference between males and females in their use of SRL processes.

The current study showed that there are significant differences between females and males in SRL because girls scored themselves higher in all factors except help seeking as there was no difference by gender in this factor. As mentioned previously, the small number of items and the low reliability of the help-seeking sub-scale may have attenuated any relationship (Field, 2014). Nevertheless, Bidjerano (2005) reported similar findings to those of the present study. In particular, he studied gender differences in academic self-regulation and administered the MSLQ to explore if the SRL strategies including cognitive and metacognitive strategies, time and study management, and help seeking vary with gender. He found that female students over-reported the use of most SRL processes such as cognitive and metacognitive strategies and time management skills.

Conversely, he reported that no statistically significant gender differences with respect to help seeking. Furthermore, the expected finding about gender differences in SRL was similar to what the literature in this study depicted (Amos, 2015, Al-Mulhim, Elsharawy, & Al Awad, 2012). In fact, most research conveyed that female students are deemed to be more self-regulating learners and they tend to use more learning strategies than boys (e.g., Bidjerano, 2005; Britner & Pajares, 2001). For this reason, responsible members such as parents, teachers, and psychologists should be provided with some suggestions and guidance to foster male students' SRL aspects.

There is a tremendous amount of research on how to promote children's different processes of SRL. For example for mothers, Grolnick and Kurowski (1999) described a structural model of the essential processes that the family should concentrate on to develop their children's academic self-regulation. The model includes three basic dimensions: autonomy support, involvement, and structure. In autonomy support, parents should value their child's abilities and skills using appropriate supportive techniques; in addition, they should promote their child's initiation and problem solving. For the involvement dimension, provision of resources should be facilitated and suitable environments that support autonomy versus controlling the behaviour should be prepared to the child. Finally, the third dimension in the model illustrates that parents should provide clear and consistent guidelines, rules, and expectations to their children to so that they understand the connections between their actions and desired outcomes. In order to ensure a sufficient acquisition of SRL processes for children, the school environment should also be productive.

Studies on academic self-regulation have undertaken numerous interventions to instruct teachers on how to develop the different aspects of their learners' SRL. Rosalia (2014) suggested that instructors should encourage peer feedback during the process of learning as it is considered a critical component of eliciting academic self-regulation. Dignath et al. (2008) emphasized the importance of involving primary school students in a SRL training programmes that are proved to be effective in making learners successfully self-regulating. For example, one of the training programmes that has been shown to be efficient is a scaffolding technique when a teacher attempt to gradually embed SRL

strategies in the students' learning processes (Azevedo & Hadwin, 2005; Shih, Chen, Chang, & Kao, 2010; Perry, Hutchinson, & Thauberger, 2008; Shamir & Lazerovitz, 2007; Beaumont, Moscrop, & Cabbibg, 2016). Generally, when teachers intend to promote their learners' aspects of SRL, they should involve themselves in some processes of SRL during their teaching since learners usually tend to imitate what their teachers do.

5.4. PS and SRL as predictors of academic achievement

Findings of the present study indicate that there is no significant difference in means of science achievement between males and females. The literature presents that females in Saudi Arabia tend to outperform males in most subjects (Amos, 2015; Al-Mulhim, Elsharawy, & Al Awad, 2012). As mentioned in the findings section, the generosity in grading students with 'Excellent' grade may have led to such uncertain finding. Otherwise, the difference in gender has been reduced through some teaching techniques and implementations that concentrate on improving and balancing males' achievement with females'.

The findings in the study also showed that there is no direct relationship between PS and primary students' academic achievement. This result does not support most of the findings introduced in the literature but it does support the findings of Masud et al. (2016), which stated that PS does not influence students' academic outcome. One critical reason of such a relationship could be referred to the inexactitude of grading students since several primary schools principals declared that they are very generous when they assess their students. Therefore, the large number of students who were given 'Excellent' grade easily might have been a main cause of this finding. Essentially, if this is not the case, several studies posited that PS does not always have a significant influence on the academic outcome of students. For instance, Spera (2005) stated that the relationship between PS and students' academic performance is not immutable or consistent due to the confounding influences of socioeconomic status, race and ethnicity. Similarly, Fang et al. (2003) emphasised that in order to strengthen the relationship between PS and SRL, certain individual factors have to be mediated this relationship. Accordingly, it is possible that PS influences academic achievement through its effect on SRL. PS did not predict

academic achievement as expected in the current study, but SRL factors were found to predict students' academic achievement.

The present study reported that the SRL is significantly correlated with academic achievement as students with higher grades were more self-regulated learners the lower achievers. This finding supports most of the research highlighted in the literature review in this study (Zimmerman & Schunk, 2001; Zimmerman & Schunk, 2012; Wilson and Narayan, 2016; Zuffuanò et al., 2013; Kistner et al., 2010). Several studies stressed the importance of SRL in enhancing students' academic achievement. Dignath and Büttner (2008) stated that SRL components are critical prompts and standards for students' life-long learning at school. Moreover, when the process of learning is facilitated with these learning strategies, learners become more likely to succeed and achieve high scores. Accordingly, policy makers should pay attention to this fundamental learning technique to enhance students' learning outcomes in Saudi Arabia.

As it was mentioned previously, educational interventions designed to enhance students' SRL that were conducted by a number of researchers is an imperative step. Therefore, educators should implement mandatory courses of suitable intervention programmes that help instructors to develop the necessary skills for assisting learners to develop appropriate SRL strategies. The education ministry should be set up to ensure the equity for students in accessing the same learning experiences in primary schools.

5.6. Conclusion

The current study findings revealed some evidence of the existence of the relationship among parenting style, self-regulated learning and academic achievement. The relationships between these components were identified based on three stages of the data analysis. Foremost, the correlation between PS and child gender was studied. The mothers in this study were found to be authoritative and there was no significant difference between females and males in regard to three types of PS. Furthermore, the relationship between PS and factors of SRL were examined and the results showed that PS does play an active role in a key aspect of SRL.

It was shown that authoritativeness is positively and significantly correlated with

self-efficacy, metacognitive self-regulation, and time and study management. Conversely, permissiveness appeared to be negatively and significantly related to self-efficacy and metacognitive self-regulation, whereas the authoritarian PS did not have any significant relationship with SRL. Finally, the predictors of academic achievement were determined by the components of PS and SRL. The results uncovered that the three types of PS are not significant predictors of academic achievement. On the other hand, all examined variables of SRL could significantly predict the students' level of achievement.

From the highlighted study findings, the role of parenting style and academic self-regulation on Saudi primary students can be clearly recognised. These results contribute to the field of education research because they draw the attention to the importance of the home environment in facilitating students' capabilities to exert themselves to exercise efficient control over their learning processes. As parents and educators may not have critically realised the actual influence of parenting styles on students' academic behaviours and outcomes, it was necessary to draw attention to these relationships. Therefore, parents, teachers, and education ministry should work collaboratively to help students to better progress in their studies. With the consideration of some of the applicable implications mentioned in this chapter, they could set a clear plan with each one's duties and responsibilities for creating successful and independent students. In addition, to emphasise the significance of the influence of PS and SRL on students' academic outcomes, cognitive and educational psychologists and researchers should also do further investigations to provide more guidance about the relationships between these aspects.

5.7. Implications for Future Research

The following suggestions and recommendations were made for consideration for future research:

i. Due to the lack of research on PS and SRL in Saudi Arabia, further studies should be conducted to determine whether the findings of this study are representative.
ii. As not all the findings were as expected, it can be assumed that students and

mothers might have over-rated themselves with academically and socially desirable responses. Thus, interviews and focused group discussions with mothers and students might allow for crosschecking the consistency of the participants' responses.

iii. The measures used to assess the authoritarian and permissive PS in the PSQ had to be revised in this study. Hence, further research is needed to examine the appropriateness of these sub-scales to be conducted in the Saudi context.

iv. The MSLQ in measuring the SRL processes were found suitable in this study. However, the resource management sub-scales (time and study management, help seeking) have to be reconsidered due to the low reliability found in this study.

v. As the achievement variable was considerably skewed, future studies should involve a standard classroom test prepared by local researchers and delivered under controlled conditions to get a more precise indication of students' academic achievement.

vi. As the mothers in this study were considered authoritative but not authoritarian as previous studies stated, this study may be generalised to the Saudi primary students in Sharqia region. Thus, the study should be replicated in different regions in Saudi Arabia to find out the regional differences explain the contrary findings between studies.

vii. In this study, it was not possible to use the SEM to analyse more accurate relationships between PS, SRL and achievement. Future studies should consider the implementation of this model to get more precise findings.

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Appendix I

a. A letter introducing the researcher to the school principals of female schools

David D Curtis
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School of Education

12 November 2015

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CRICOS Provider No. 00114A

To whom it may concern

This letter is to introduce Mrs Tahany Alnafea, a student enrolled in the Master of Education course in the School of Education at Flinders University. As part of this degree, Tahany is undertaking a research project investigating relationships between parenting styles and the extent to which students are able to manage their own learning.

Tahany's project will lead to the publication of a thesis and an article about this relationship. The study will focus on students aged 11-12 years and their parents. In the research, mothers of children will be asked to complete a questionnaire about their parenting styles and the children will be asked to complete a questionnaire about the management of their own learning.

I ask that you assist Tahany in her research by allowing her to distribute questionnaires for 11 to 12 year-old children at your school and their mothers. Children will be given an envelope containing copies of the questionnaires. They will be asked to take the envelopes home where their mothers can complete the parent questionnaire and, if mothers agree, children can complete the child questionnaire. It is expected that it will take mothers 20-minutes to complete the parent questionnaire and 30-minutes for children to complete the child questionnaire. Children will be asked to bring the envelopes back to the school where the children can place the envelopes in a box from which Tahany can collect them.

Please note that participation is voluntary. No parents or children are required to complete the questionnaires. Responses will be anonymous. Neither parents nor children will be asked to write their names on these questionnaires.

The research is expected to be beneficial to education in the Kingdom of Saudi Arabia as little is known about the relationship between parenting styles and self-regulated learning in this context.

If you have any questions about this research, please contact Tahany's supervisor, Associate professor David Curtis/ his contact details are included in the box at the top of this letter.

Yours sincerely,

Dr David D Curtis
Associate Professor

This research project has been approved by the Flinders University Social and Behavioural

b. A letter introducing the researcher's assistant to the school principals of male schools

Flinders UNIVERSITY

David D Curtis
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School of Education

12 November 2015

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CRICOS Provider No. 00114A

To whom it may concern

This letter is to introduce Mr Hussain Aljuliamy, a petty officer (first class), specialised in Aviation Technician in the Royal Saudi Navy Forces. As his wife Mrs Tahany Alnafea is enrolled in the Master of Education course in the School of Education at Flinders University in Adelaide, AU, Hussain is going to assist Tahany in undertaking a research project investigating relationships between parenting styles and the extent to which students are able to manage their own learning.

Tahany's project will lead to the publication of a thesis and an article about this relationship. The study will focus on students aged 11-12 years and their parents. In the research, mothers of children will be asked to complete a questionnaire about their parenting styles and the children will be asked to complete a questionnaire about the management of their own learning.

I ask that you assist Hussain in his wife's research by allowing him to distribute questionnaires for 11 to 12 year-old children at your school and their mothers. Children will be given an envelope containing copies of the questionnaires. They will be asked to take the envelopes home where their mothers can complete the parent questionnaire and, if mothers agree, for the children to complete the child questionnaire. It is expected that it will take mothers 20-minutes to complete the parent questionnaire and 30-minutes for children to complete the child questionnaire. Children will be asked to bring the envelopes back to the school where the children can place the envelopes in a box from which Tahany can collect them.

Please note that participation is voluntary. No parents or children are required to complete the questionnaires. Responses will be anonymous. Neither parents nor children will be asked to write their names on these questionnaires.

The research is expected to be beneficial to education in the Kingdom of Saudi Arabia as little is known about the relationship between parenting styles and self-regulated learning in this context.

If you have any questions about this research, please contact Tahany's supervisor, Associate professor David Curtis/ his contact details are included in the box at the top of this letter.

Yours sincerely,

David D Curtis

Dr David D Curtis
Associate Professor

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee (Project Number xxxx) (This number will be provided by SBREC 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 or by fax on 8201-2035 or email human.researchethics@flinders.edu.au.

c. Information Sheet for School Principals

(Page 1)

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CRICOS Provider No. 00114A

INFORMATION SHEET

Title: Parenting Styles and Children's academic self-regulation in school

Researcher:
Mrs Tahany Alnafea
School of Education (Master of Cognitive Psychology and Educational Practice)
Flinders University

Supervisor(s):
1- Assoc. Prof. David Curtis
School of Education
Flinders University
Ph: +61 8 82015637

2- Dr. Neil Welch
School of Education
Flinders University
Ph: +61 8 82013308, +61 8 82012839, +61 8 82013059

Description of the study:
This study is part of the project entitled 'Parenting Styles and Children's academic self-regulation in school'. This project will investigate relationships between parenting styles and the extent to which students are able to manage their own learning.
This project is supported by Flinders University, School of Education department.

Purpose of the study:
This project aims to find out if 'parenting styles'

- Affect children's academic self-regulation.
- Affect Children's competence in school and their independence.

What will I be asked to do?
I ask that you assist the researcher by allowing them to distribute questionnaires for 11 to 12 year-old children at your school and their mothers.

inspiring achievement

(Page 2)

What benefit will I gain from being involved in this study?
The research is expected to be beneficial to education in the Kingdom of Saudi Arabia as little is known about the relationship between parenting styles and self-regulated learning in this context.

Will I be identifiable by being involved in this study?
Participation is voluntary. No parents or children are required to complete the questionnaires. Responses will be anonymous. Neither parents nor children will be asked to write their names on these questionnaires.

Are there any risks or discomforts if I am involved?
There are no any risks or discomforts when you are involved in the research. If you have any concerns regarding anticipated or actual risks or discomforts, please raise them by contacting Tahany's supervisor. Associate professor David Curtis/ his contact details are included in the box at the top of this information sheet.

How do I agree to participate?
Participation is voluntary. A consent form accompanies the letter. If you would like to participate and to consent to your school being involved please sign the consent form attached.

How will I receive feedback?
After the completion of this research, you will receive a letter with the findings and suggestions that might contribute in making improvements on children's academic self-regulation that influence their future learning and outcomes.

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

d. Principal Participation Permission Form

CONSENT FORM FOR PARTICIPATION IN RESEARCH

Parenting Styles and Children's Academic Self-regulation in school

I

.....

being as a school principal hereby consent my students in this school participating, as requested, in filling out questionnaires for the research project.

I have read the information provided.

Principal's signature.....Date.....

Appendix II

a. A letter introducing the researcher to children's mothers

David D Curtis
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School of Education

12 November 2015

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CRICOS Provider No. 00114A

Dear Mothers

I hold the position of Associate Professor in the School of Education at Flinders University. This letter is to introduce Mrs Tahany Alnafea who is enrolled in the Master of Education course in the School of Education at Flinders University in Adelaide, AU. As part of this degree, Tahany is undertaking a research project investigating relationships between parenting styles and the extent to which students are able to manage their own learning.

Tahany's project will lead to the publication of a thesis and an article about this relationship. The study will focus on students aged 11-12 years and their parents. If you are willing to participate in the research, she would like to invite you to assist in this project by consenting you to complete a questionnaire about parenting styles and your child to complete a questionnaire about the management of their own learning.

It is expected that it will take you 20-minutes to complete the parent questionnaire and 30-minutes for your child to complete the child questionnaire.

Please note that participation is voluntary. You and you child are not required to complete the questionnaires. Responses will be anonymous. Neither you nor your child will be asked to write your names on these questionnaires.

If you would like to consent to your child being involved please sign the consent form attached and give the envelope to your child to bring it back to the school where the children can place the envelopes in a box from which Tahany can collect them.

If you have any questions about this research, please contact Tahany's supervisor, Associate professor David Curtis/ his contact details are included in the box at the top of this letter.

Thank you for your attention and assistance.

Yours sincerely,

Dr David D Curtis
Associate Professor

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee (Project Number xxxx) (This number will be provided by SBREC 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 or by fax on 8201-2035 or email human.researchethics@flinders.edu.au.

b. Information Sheet for Mothers

(Page 1)

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CRICOS Provider No. 00114A

INFORMATION SHEET

Title: Parenting Styles and Children's academic self-regulation in school

Researcher:
Mrs Tahany Alnafea
School of Education (Master of Cognitive Psychology and Educational Practice)
Flinders University

Supervisor(s):
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2- Dr. Neil Welch
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Flinders University
Ph: +61 8 82013308, +61 8 82012839, +61 8 82013059

Description of the study:
This study is part of the project entitled 'Parenting Styles and Children's academic self-regulation in school'. This project will investigate relationships between parenting styles and the extent to which students are able to manage their own learning.
This project is supported by Flinders University, School of Education department.

Purpose of the study:
This project aims to find out if 'parenting styles'

- Affect children's academic self-regulation.
- Affect Children's competence in school and their independence.

What will I be asked to do?
You as a mother will be asked to complete a questionnaire about your parenting styles and your child will be asked to complete a questionnaire about the management of his/her own learning.

(Page 2)

What benefit will I gain from being involved in this study?
The research is expected to be beneficial to education in the Kingdom of Saudi Arabia as little is known about the relationship between parenting styles and self-regulated learning in this context.

Will I be identifiable by being involved in this study?
Participation is voluntary. You and you child are not required to complete the questionnaires. Responses will be anonymous. Neither you nor your child will be asked to write your names on these questionnaires.

Are there any risks or discomforts if I am involved?
There are no any risks or discomforts when you are involved in the research. If you have any concerns regarding anticipated or actual risks or discomforts, please raise them by contacting Tahany's supervisor. Associate professor David Curtis/ his contact details are included in the box at the top of this information sheet.

How do I agree to participate?
Participation is voluntary. You may answer 'no comment' or refuse to answer any questions. A consent form accompanies the questionnaire. If you would like to participate and to consent to your child being involved please sign the consent form attached and give the envelope to your child to bring it back to the school where the children can place the envelopes in a box from which Tahany can collect 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

c. Parental Consent Form for Child Participation

Flinders
UNIVERSITY

PARENTAL CONSENT FORM FOR CHILD PARTICIPATION IN RESEARCH

Parenting Styles and Children's Academic Self-regulation in school

I .....

being over the age of 18 years hereby consent my child .....

participating, as requested, in filling out the questionnaires for the research project.

1. I have read the information provided.
2. Details of procedures and any risks have been explained to my satisfaction.
3. I am aware that I should retain a copy of the Information Sheet and Consent Form for future reference.
5. I understand that:
   - My child may not directly benefit from taking part in this research.
   - My child is free to decline to answer particular questions.
   - While the information gained in this study will be published as explained, my child will not be identified, and individual information will remain confidential.
   - Whether my child participates or not, will have no effect on any treatment or service that is being provided to him/her.
   - Whether my child participates or not, or withdraws after participating, will have no effect on his/her progress in his/her course of study, or results gained.

Participant's signature.....Date.....

d. Parenting Style Questionnaire

Authoritative Parenting Style

1. I am responsive to my child's feelings and needs.

   Never 1 2 3 4 5 6 Always
2. I take my child's wishes into consideration before I ask him/her to do something.

   Never 1 2 3 4 5 6 Always
3. I explain to my child how I feel about his/her good/bad behaviour.

   Never 1 2 3 4 5 6 Always
4. I encourage my child to talk about his/her feelings and problems.
5. I encourage my child to freely "speak his/her mind", even if he/she disagrees with me.

   Never 1 2 3 4 5 6 Always
6. I explain the reasons behind my expectations.

   Never 1 2 3 4 5 6 Always
7. I provide comfort and understanding when my child is upset.

   Never 1 2 3 4 5 6 Always
8. I compliment my child.

   Never 1 2 3 4 5 6 Always
9. I consider my child's preferences when I make plans for the family (e.g., weekends away and holidays).

   Never 1 2 3 4 5 6 Always
10. I respect my child's opinion and encourage him/her to express them.

    Never 1 2 3 4 5 6 Always
11. I treat my child as an equal member of the family.

    Never 1 2 3 4 5 6 Always
12. I provide my child reasons for the expectations I have for him/her.

    Never 1 2 3 4 5 6 Always
13. I have warm and intimate times together with my child.

    Never 1 2 3 4 5 6 Always

Authoritarian Parenting Style

1. When my child asks me why he/she has to do something I tell him/her it is because I said so, I am your parent, or because that is what I want.

Never 1 2 3 4 5 6 Always

2. I punish my child by taking privileges away from him/her (e.g., TV, games, visiting friends).

Never 1 2 3 4 5 6 Always

5. I yell when I disapprove of my child's behaviour.

Never 1 2 3 4 5 6 Always

6. I explode in anger towards my child.

Never 1 2 3 4 5 6 Always

7. I spank my child when I don't like what he/she does or says.

Never 1 2 3 4 5 6 Always

8. I use criticism to make my child improve his/her behaviour.

Never 1 2 3 4 5 6 Always

9. I use threats as a form of punishment with little or no justification.

Never 1 2 3 4 5 6 Always

10. I punish my child by withholding emotional expressions (e.g., kisses and cuddles).

Never 1 2 3 4 5 6 Always

11. I openly criticise my child when his/her behaviour does not meet my expectations.

Never 1 2 3 4 5 6 Always

12. I find myself struggling to try to change how my child thinks or feels about things.

Never 1 2 3 4 5 6 Always

13. I feel the need to point out my child's past behavioural problems to make sure he/she will not do them again.

Never 1 2 3 4 5 6 Always

14. I remind my child that I am his/her parent.

Never 1 2 3 4 5 6 Always

15. I remind my child of all the things I am doing and I have done for him/her.

Never 1 2 3 4 5 6 Always

Permissive Parenting Style

1. I find it difficult to discipline my child.

   Never 1 2 3 4 5 6 Always

2. I give into my child when he/she causes a commotion about something.

   Never 1 2 3 4 5 6 Always

3. I spoil my child.

   Never 1 2 3 4 5 6 Always

4. I ignore my child's bad behavior.

   Never 1 2 3 4 5 6 Always

c. The Motivated Strategies for Learning Questionnaire (MSLQ)

1. I think I will be able to use what I learn in science in other courses.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

2. It is important for me to learn the course material in science.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

3. I am very interested in the content area of science.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

4. I think the course material in science is useful for me to learn.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

5. I like the subject matter science.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

6. Understanding the subject matter of science is very important to me.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

7. I believe I will receive an excellent grade in science.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

8. I am certain I can understand the most difficult material presented in the readings for science.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

9. I am confident I can do an excellent job on the assignments and tests science.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

10. I am confident I can understand the most complex material presented by the instructor in science.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

11. When I study for science, I practice saying the material to myself over and over.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

12. I make lists of important terms for science and memorize the lists.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

13. When reading for science, I try to relate the material to what I already know.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

14. When I study for science, I write brief summaries of the main ideas from the readings and the concepts from the lectures.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

15. I try to apply ideas from course readings in science activities such as lecture and discussion.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

16. When I study the readings for science, I outline the material to help me organize my thoughts.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

17. I make simple charts, diagrams, or tables to help me organize course material.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

18. I often find myself questioning things I hear or read in science to decide if I find them convincing.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

19. I treat the science material as a starting point and try to develop my own ideas about it.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

20. When I become confused about something I'm reading for science, I go back and try to figure it out.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

21. I ask myself questions to make sure I understand the material I have been studying in science.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

22. I try to change the way I study in order to fit the science course requirements and instructor's teaching style.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

23. I try to think through a topic and decide what I am supposed to learn from it rather than just reading it over when studying.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

24. When studying for science I try to determine which concepts I don not understand well.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

25. When I study for science, I set goals for myself in order to direct my activities in each study period.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

26. Before I study new course material thoroughly, I often skim it to see how it is organized.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

27. I usually study in a place where I can concentrate on my course work for science.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

28. I make good use of my study time for science.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

29. I attend class regularly.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

30. I often find that I spend enough time in this science even when I have other activities.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

31. I make sure I keep up with the weekly readings and assignments for science.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

32. When I have trouble learning the material in science, I try to seek help.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

33. I ask the instructor to clarify concepts I don not understand well.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

34. When I can not understand the material in science, I ask another student in this class for help.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

35. I try to identify students in this class whom I can ask for help if necessary.

1	2	3	4	5	6	7
very untrue of me	untrue of me	somewhat untrue of me	neutral	somewhat true of me	true of me	Very true of me

Appendix III − a

Table 14 The Loadings of the PSQ's Items for their Validity into One Component in Each Scale

Scale	Item	Loadings
Authoritative Parenting Styles	1	.594
	2	.571
	3	.662
	4	.721
	5	.650
	6	.700
	7	.573
	8	.714
	9	.595
	10	.749
	11	.658
	12	.617
	13	.696
Authoritarian Parenting Styles	14	.459
	15	.312
	16	.562
	17	.507
	18	.601
	19	.566
	20	.593
	21	.419
	22	.510
	23	.405
	24	.572
	25	.572
	26	.593
Permissive Parenting Styles	27	.734
	28	.763
	29	-.043
	30	.517

Appendix III – b

Table 15 The Loadings of the MSLQ's Items for their Validity into One Component in Each Scale

Scale	Item	Loadings
Task Value	1	.580
	2	.571
	3	.724
	4	.728
	5	.712
	6	.713
Self-efficacy	7	.771
	8	.810
	9	.796
	10	.783
Cognitive and Metacognitive Strategy Use	11	.435
	12	.691
	13	.664
	14	.744
	15	.635
	16	.641
	17	.704
	18	.619
	19	.616
Metacognitive Self-regulation	20	.603
	21	.738
	22	.674
	23	.705
	24	.678
	25	.753
	26	.731
Time and Study Management	27	.685
	28	.588
	29	.637
	30	.638
	31	.770
Help Seeking	32	.657
	33	.613
	34	.774
	35	.727