Developing nursing students' evaluative judgement: exploring the pedagogical concept in nursing education

By

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Abstract

On graduation, Australian nursing students gain registration with the Nursing and Midwifery Board of Australia (NMBA) and enter a professional regulated workforce. It is incumbent on higher education providers to equip students with requisite skills, knowledge, and capabilities to prepare them for the transition from student to healthcare professional. An important capability is evaluative judgement where a person can make decisions about the quality of their and others' work. This capability is important for Registered nurses who need to make decisions about the quality of their and others clinical practice and recognise when they need future education or training. Registered nurses who can reflect on their clinical practice and identify where their knowledge deficits are, demonstrate competencies of a self-regulated, lifelong learner.

How educators develop students' evaluative judgement is mainly theoretical, with few studies exploring the practical application of the theory. Self/peer-assessment, peer feedback and feedback conversations have been suggested as approaches that have potential to develop students' evaluative judgement. Using exemplars or rubrics to show students what quality work looks like has also been investigated as potential avenues. Exemplars or rubrics are potential means by which students can benchmark their understanding of the required standard, comparing their work and making judgements on it merit.

Developing students' evaluative judgement supports the NMBA standards for practice through fostering reflexive practice. The concept of evaluative judgement is new to nursing education and no primary studies have been found that explore the practical application of the theoretical pedagogy in nursing curricula. To address this gap, the studies presented in this thesis aimed to explore the development of evaluative judgement in nursing education, both theoretical and practical components.

Program of research

The central research question guiding this program of research is: What are the possible strategies to develop students' evaluative judgement in undergraduate and postgraduate nursing education? A constructivist framework underpinned the design of the research by supporting the idea that students' evaluative judgment emerges through active participation, critical thinking, and the integration of prior knowledge with new experiences, all within authentic learning contexts. This program of research was undertaken in a series of four studies. Three of these studies are published in Quartile 1 peer-reviewed journals (Chapters Four to Six), with the final study (Chapter Seven) currently under review. The publications are included in the thesis as Word documents, consistent with Flinders University policy, inclusive of their respective reference lists. A reference list for the entire thesis is also included after Chapter Eight.

The first two studies in the thesis explored the practical application of developing evaluative judgement in postgraduate emergency nursing students. Study one is a peer reviewed publication that explored postgraduate nursing students' perceptions of consensus marking with online oral vivas following a retrospective thematic analysis. This study explored a new approach to grading oral viva exams using consensus marking. The design of the consensus marking approach was underpinned by the theoretical concepts of developing evaluative judgement. The findings of this study confirmed that this approach facilitated reflection, self-evaluation, and feedback dialogue. Study two is a peer reviewed publication exploring and comparing two different assessment grading methods for postgraduate nursing students, consensus marking as a grading method for the development of evaluative judgement and traditional grading methods. A convergent mixed methods parallel research design was used to compare the two grading methods. The findings of this study identified that students' anxiety levels were lower, and satisfaction levels were higher when students engaged in consensus marking versus traditional grading methods. The findings of

these two studies suggested that online oral vivas using consensus marking is an assessment and grading method that provides opportunities for students to develop their evaluative judgement.

Embedding the concept of developing evaluative judgement in the undergraduate nursing program was more complex and required careful consideration. Undergraduate nursing student demographics, and exposure to the nursing profession is very different to postgraduate nursing students. In addition, the large student numbers in undergraduate nursing programs meant that while consensus marking was a successful assessment method in postgraduate students, it was not necessarily generalisable or practical for the undergraduate cohort. Therefore, studies three and four in the program of research shifted focus to exploring foundational concepts in developing evaluative judgement at the undergraduate nursing level.

Study Three produced a peer reviewed publication following a systematic scoping review of the literature. This foundational work explored the features that aligned with developing evaluative judgement in nursing clinical practice teaching and assessment methods. The identification of important aspects of developing evaluative judgement were examined in the literature. The findings highlight that the evaluative judgement features of discerning quality and feedback were well embedded in nursing clinical teaching and assessment methods. However, the judgement process and calibration were rarely included. The review also identified that 41% of clinical practice education feedback is verbal and it was not reported whether the self-evaluation was reviewed in the feedback process. This finding suggests that there is a missed opportunity to facilitate students' understanding of what quality work looks like. The results of the systematic scoping review informed the fourth and final study, exploring feedback in undergraduate clinical practice.

Study four, explored feedback as a process to develop nursing students' evaluative judgement in clinical practice education. This qualitative study applied the Co-creating Knowledge Translation framework (Co-KT) to explore student, academic, and clinical educator perspectives of

feedback as a process to develop nursing students' evaluative judgement in clinical practice education. This study highlighted that student, academic and clinical educator perceptions of good feedback practice was closely aligned to the concepts of developing evaluative judgement. When feedback practice was reported by participants as working well, the feedback process described had embraced aspects necessary to develop evaluative judgement. Feedback that facilitates the development of evaluative judgement has potential to improve the quality of nursing clinical education and develop students' lifelong learning capabilities.

Significance

To the best of our knowledge, this is the first program of research that has explored possible strategies to embed the concepts of developing evaluative judgement in nursing curricula. The findings add to the understanding and practical application of the theoretical concepts of evaluative judgement in nursing education and provide a foundation from which further research and practice can explore this important capability.

Declaration

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

Bridget Henderson

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Publications and conference presentations arising from this thesis

Publications:

Henderson, B., Aitken, R., Lewis, L. K., & Chipchase, L. (2021). Postgraduate nursing students' perceptions of consensus marking with online oral vivas: A qualitative study. Nurse Education Today, 101, 104881–104881. https://doi.org/10.1016/j.nedt.2021.104881

Henderson, B., Chipchase, L., Aitken, R., & Lewis, L. K. (2022). Consensus marking as a grading method for the development of evaluative judgement: Comparing assessor and students. Nurse Education in Practice, 63, 103386–103386. https://doi.org/10.1016/j.nepr.2022.103386

Henderson, B., Chipchase, L., Golder, F., & Lewis, L. K. (2023). Developing student nurses' evaluative judgement in clinical practice tertiary education: A systematic scoping review of teaching and assessment methods. *Nurse Education in Practice*, *73*, 103818–103818. https://doi.org/10.1016/j.nepr.2023.103818

Manuscript under review:

Henderson, B., Aitken, R., Chipchase, L. & Lewis, L. K., (2024). Exploring student, academic and clinical educator perspective of feedback as a process to develop nursing students' evaluative judgement in clinical practice education: a qualitative study

Conference presentations:

**Denotes presenting author*

***Henderson, B.,** Chipchase, C., Aitken, R. & Lewis, L. Consensus Marking: Building an Educational Alliance and Fostering Evaluative Judgement.

Oral presentation at the 9th International Clinical Skills Conference (ICSC) 22nd May 2023 Prato, Tuscany.

***Henderson, B.,** Chipchase, C., Aitken, R. & Lewis, L. Consensus Marking: Building an Educational Alliance and Fostering Evaluative Judgement.

Oral presentation at the Higher Education Research Group Adelaide (HERGA) 26th of Sept 2023 Adelaide South Australia.

***Henderson, B.,** Chipchase, C., Aitken, R. & Lewis, L. Cultivating innovation by developing nursing students' evaluative judgement in clinical practice education.

Oral presentation at the Australian & New Zealand Association for Health Professional Educators (ANZAHPE) 3rd of July 2024

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Definition of terms

Term	Explanation
Academic	An educator and researcher or scholar employed at a university.
Assessment as learning	When students actively engage in the assessment process, using it to reflect on and guide their own learning.
Assessment for learning	Assessment conducted to inform and improve teaching and learning during the instructional process.
Assessment of learning	Evaluation that summarizes what students have learned, typically used for grading or certification.
Australian Health Practitioner Regulating Agency (Ahpra)	An agency that provides administrative support to the 15 legislated national health professional regulation boards to ensure that Australian registered health practitioners are suitably trained, qualified, and safe to practice.
Australian Nursing & Midwifery Accreditation Council (ANMAC)	An accreditation entity appointed by the Nursing and Midwifery Board of Australia to assess and accredit nursing and midwifery programs at universities.
Authentic assessment	A form of evaluation that focuses on measuring students' abilities through real-world tasks and activities that closely resemble the challenges they might face outside the classroom. Unlike traditional assessments, such as multiple-choice tests, authentic assessments require students to apply their knowledge and skills in practical, meaningful contexts. These assessments are designed to assess critical thinking, problem-solving, and the ability to transfer knowledge to new situations, rather than simply recalling facts. Examples of authentic assessment include projects, portfolios, presentations, and performances that require students to demonstrate their learning in ways that mirror real-life applications.
Clinical facilitator/mentor/ educator/preceptor	An educator who is a qualified nurse and is employed by the university or hospital to support students on clinical placements.

	The educator/facilitator may not possess formal teaching qualifications. May undertake formal assessment of students work.
Clinical placement/ professional placement	The component of the curriculum when a student engages in clinical practice under supervision in a hospital, clinic or surgery, or community setting such as nursing homes or home care.
Clinical practice education	Clinical practice educational activities include any direct intervention or treatment that is learnt through patient contact such as assessing blood pressure, medication administration, conducting a health or physical assessment, and therapeutic communication. Or indirect clinical practice activities such as leadership, documentation, or activities on behalf of the patient in the absence of the patient.
Clinical simulation	A method of teaching clinical skills that mimics the real clinical setting. Simulation can be conducted using manikins, actors, standardised patient scenarios. It is an educational process that can replicate clinical practices in a safe environment.
Consensus marking	A method of grading work using the key features of developing evaluative judgement.
Continual professional development (CPD)	Educational activities that are available to qualified nurses that are relevant to the clinical practice. These educational activities can range from a reflection of a journal article to a program of study such as advanced life support training. CPD is required for ongoing registration as a nurse and must be at least 20 hours per year for Registered nurses.
Course coordinator	The academic who is responsible for overseeing the implementation of a university course/program of study.
Enrolled nurse (EN)	An enrolled nurse holds a diploma qualification and is registered with the Nursing and Midwifery Board of Australia (NMBA). The EN must be supervised by a Registered nurse. The scope of a EN different to a Registered nurse.

Evaluative judgement	*"the capability to make decisions about the quality of work of self and others*" (Tai et al., 2018, p.5).
Feedback dialogue	Is an interactive process where learners and educators or peers exchange information and insights about performance, understanding, or work. This dialogue is aimed at enhancing learning, understanding, and improvement by discussing feedback openly and constructively. It's more than just receiving comments—it's an ongoing conversation that helps clarify expectations, identify strengths and areas for development, and foster a deeper understanding.
Formative assessment	Ongoing assessment used to monitor student progress and provide feedback during the learning process.
Graduate qualities / attributes	Statements of desirable graduate learning outcomes.
Nurse educator	A person who provides instruction or education to nursing students. Other terms include teacher and tutor.
Nursing & Midwifery board of Australia (NMBA)	The Nursing and Midwifery Board of Australia is a legislated body that protects the public by ensuring that Australia's nurses and midwifes are suitably trained, qualified, and safe to practise.
Postgraduate (Post entry level)	A student who holds an initial qualification to practice as a nurse and is seeking additional specialised qualifications to further their professional career in nursing.
Registered Nurse (RN)	A person who has completed the prescribed education preparation, at university level and is registered under the Health Practitioner Regulation National Law as a Registered nurse in Australia.
Self-regulated learning	Refers to the process where learners take control of and manage their own learning. This involves setting personal goals, monitoring their progress, and adjusting strategies as needed. An approach to learning that supports students to become independent and effective learners.
Simulation	Simulation is a training method commonly used in nursing. Simulation exposes students to realistic clinical situations using mannequins, virtual reality or actors performing as patients.

Student agency	Refers to the capacity of students to take an active role in their own learning process. It involves students having the ability, autonomy, and responsibility to make decisions about their learning, set goals, monitor progress, and reflect on their outcomes. Student agency emphasizes self-direction, empowerment, and the development of critical thinking and problem-solving skills, allowing students to take ownership of their educational journey.
Summative assessment	Evaluation at the end of an instructional period to measure overall learning outcomes.
Supernumerary placement	The situation when a student engaging in a clinical placement/professional placement is not counted in the staffing numbers and is free to observe, learn and engage in clinical practice at the appropriate year level scope of practice.
Sustainable assessment	An assessment approach that focuses on long-term learning and encourages ongoing student development and reflection.
Technical And Further Education (TAFE)	TAFE colleges award Australian Qualifications Framework qualifications accredited in the Vocational Education and Training sector: Certificate I, Certificate II, Certificate III, Certificate IV, Diploma, Advanced Diploma, Graduate Certificate and Graduate Diploma qualifications. A Diploma is the qualification required for entry into practice as a Registered enrolled nurse. In many instances, the nursing Diploma studied at TAFE can be used as partial credit towards bachelor's degree-level university programs.
Tertiary education	Education provided post-secondary education. Other terms include university, or higher education and normally commences at the Australian Qualifications Framework qualification level 7 – bachelor’s degree.
Tertiary Education Quality and Standards Agency (TEQSA)	An independent legislated body responsible for regulating and assuring the quality of all providers of higher education in Australia. The TEQSA Act 2011 established TEQSA as an agency.

The Higher Education Standards Framework (threshold standards) 2021 (HESF)	HESF sets out the requirements for higher education providers, entry to, and continued operations within, Australia's higher education sector.
Topic/subject/unit coordinator	Academic responsible for a topic within Flinders University course. The topic coordinators report to the course coordinator. A topic is also known as a subject, module or unit.
Undergraduate (entry to practice level)	A student who is enrolled in a nursing bachelor's degree an entry level qualification for the Registered nurse.

Chapter One

My position in the research

This chapter describes the context and factors that led me to embark on this program of research. A declaration of my position in the research, my world view, my role as a nurse educator and my teaching philosophy are then presented. Followed by an exploration of the philosophical stance that underpins the program of research. To conclude, an overview of the scope and structure of the thesis is presented. Throughout this thesis, when acknowledging my voice in the text, I have written in the first person. When I review literature and discuss scientific data, I have written in the third person.

1.1 My research journey

The end of the first semester of the academic year was fast approaching. I was the topic (unit/subject) coordinator and teacher of a postgraduate topic in an emergency nursing post graduate degree. I was also a topic coordinator of a second-year undergraduate topic that consisted of clinical based learning for the Bachelor of Nursing degree. I had a meeting arranged with a second-year undergraduate nursing student. The student had been informed that they had not passed the clinical placement, consequently, the student had requested to meet with me.

As an educator, I ensure that students completing their clinical placement meet the standards for practice outlined by the Nursing and Midwifery Board of Australia (NMBA, 2016). The standards for practice are the expectations of a nurse and inform the education standards for nursing students.

The student believed they had performed well on placement, meeting the required standard. The student had asked me to reconsider the grade. This student had passed the associated theory topic with 50% with a learning plan implemented two weeks into the six-week

clinical placement. A learning plan is additional support provided to students who are performing below the required standard. Feedback had been provided by many tutors and clinical educators throughout the semester, and additional support was provided through the learning plan. This concerned me and made me reflect that, despite multiple points of feedback, here I was sitting with this student in my office. The student had no insight into why they received a failed grade and was unable to identify where their performance fell below the required standard. Somewhat frustrated by the thought that this was not the first time I had encountered a student who lacked insight into their performance I asked myself:

"Did the student misunderstand the feedback?" or *"Was the feedback ignored?",* and *"Why is the student's evaluation of their clinical performance so different from the clinical facilitators?"*

Reflecting on that student encounter, I started thinking deeply and considered how I could make a difference for students like this. The encounter led me to commence this scholarly endeavour. I started this program of research because I wanted to improve students' insight into their own performance. And while I did not understand it at the time, my objective was to explore different ways to develop, a concept that I now know as, evaluative judgement.

1.2 Declaration of my position in the research

I trained as an Enrolled Nurse in South Africa and qualified with a hospital based vocational qualification. I moved to England and completed a university Bachelor of Nursing qualification and became a Registered nurse. In 2007, I emigrated to Australia and became an Australian citizen. I worked for 15 years as an emergency nurse in civilian hospitals and military settings in England and Australia. I maintain clinical currency as a reservist nursing officer in the Australian Defence Force with the rank of Captain. I am currently employed full time as a clinical teaching specialist in the College of Nursing and Health Sciences at Flinders University. I have worked at the same university for 12 years. During that time, I have taught into both undergraduate and postgraduate nursing courses. I have contributed significantly to the design and delivery of an emergency

nursing postgraduate course, the Master of Nurse Practitioner course, and the undergraduate nursing course. I coordinate five topics a year across the curriculum in the postgraduate and undergraduate nursing courses, and I am the Master of Nurse Practitioner course coordinator.

1.2.1 My world view and teaching philosophy

I acknowledge that my culture, gender, age, beliefs, values, education, and experiences influence the lens through which I view the world. My background influences the research choices I make and how I interpret data. Therefore, I present my world view and teaching philosophy for transparency around my potential biases.

At heart, I am a pragmatist seeking practical solutions to problems. I believe that knowledge is based on experiences and social interaction (Hickman et al., 2020), that life is dynamic, and change is constant. Accepting that experience and social interaction create knowledge, and that change brings new knowledge, I anticipate that the content that is included in my teaching material today may be superseded in the years to come, as research evidence and advances change clinical practice. Therefore, as an educator I do not see myself as a source of truth, rather my knowledge evolves as new information emerges, and as such, I espouse the value of lifelong learning. As a pragmatist, my approach to teaching and learning is practical, seeking to provide useful, authentic, and relevant learning experiences.

1.2.2 Social and cognitive constructivism

My teaching philosophy is based on social and cognitive constructivism (Irby, 2013), a pragmatic approach to teaching and learning (von Glasersfeld, 1989). As such, this program of research is underpinned by constructivist teaching and learning theory. The epistemological viewpoint of constructivism, as explored by Jean Piaget and John Dewey, is that learners construct meaning as they experience new information (Hickman et al., 2020). Therefore, I accept that knowledge is gained when learners make meaning of the experience, or new information, and that students are active participants in the learning process. Constructivist teaching and learning

focuses on students thinking about the new information, rather than focusing on delivering new information to students (Boghossian, 2006).

Social constructivist teaching and learning is practical, experiential, and collaborative (Ebo, 2018). A collaborative approach to teaching supports students to learn from each other, as would be seen in peer to peer learning or peer assessment activities. Social interaction is at the heart of cognitive growth and cognitive action is needed to learn and remember information (Kiven & Ristela, 2003). Cognitive development as explored in the collected works of L.S. Vygotsky (Rieber & Wollock, 1997), suggests that students' ability to independently solve problems is a better measure of the depth of their understanding. There have been suggestions that some students do not appreciate the cognitive demands of active learning and prefer to be passive recipients of knowledge (Zhang & Kou, 2012). However, adopting a content, teacher-focused approach, where teachers deliver information to students, provides superficial learning (Asikainen & Gijbels, 2017; Uiboleht et al., 2018). Whereas a deep learning, student-focused approach provides opportunities for students to reflect and explore their understanding (Asikainen & Gijbels, 2017; Uiboleht et al., 2018). A learning student-focused approach seeks to support students to gain meaningful and deep understanding of new knowledge (Mladenovici et al., 2022). A deeper understanding of knowledge means that students can apply their knowledge to new situations (Sugarman, 1987).

In summary, my approach to nurse education, and therefore the design of this program of research, is through the lens of pragmatism and constructivism where I see myself as a facilitator of learning rather than a didactic teacher.

1.3 Scope and structure of the thesis

The overarching research question of this thesis is: “What are the possible strategies to develop students’ evaluative judgement in undergraduate and postgraduate nursing education?” Developing evaluative judgment in nursing curricula is a new concept and has not been extensively researched prior to this program of research.

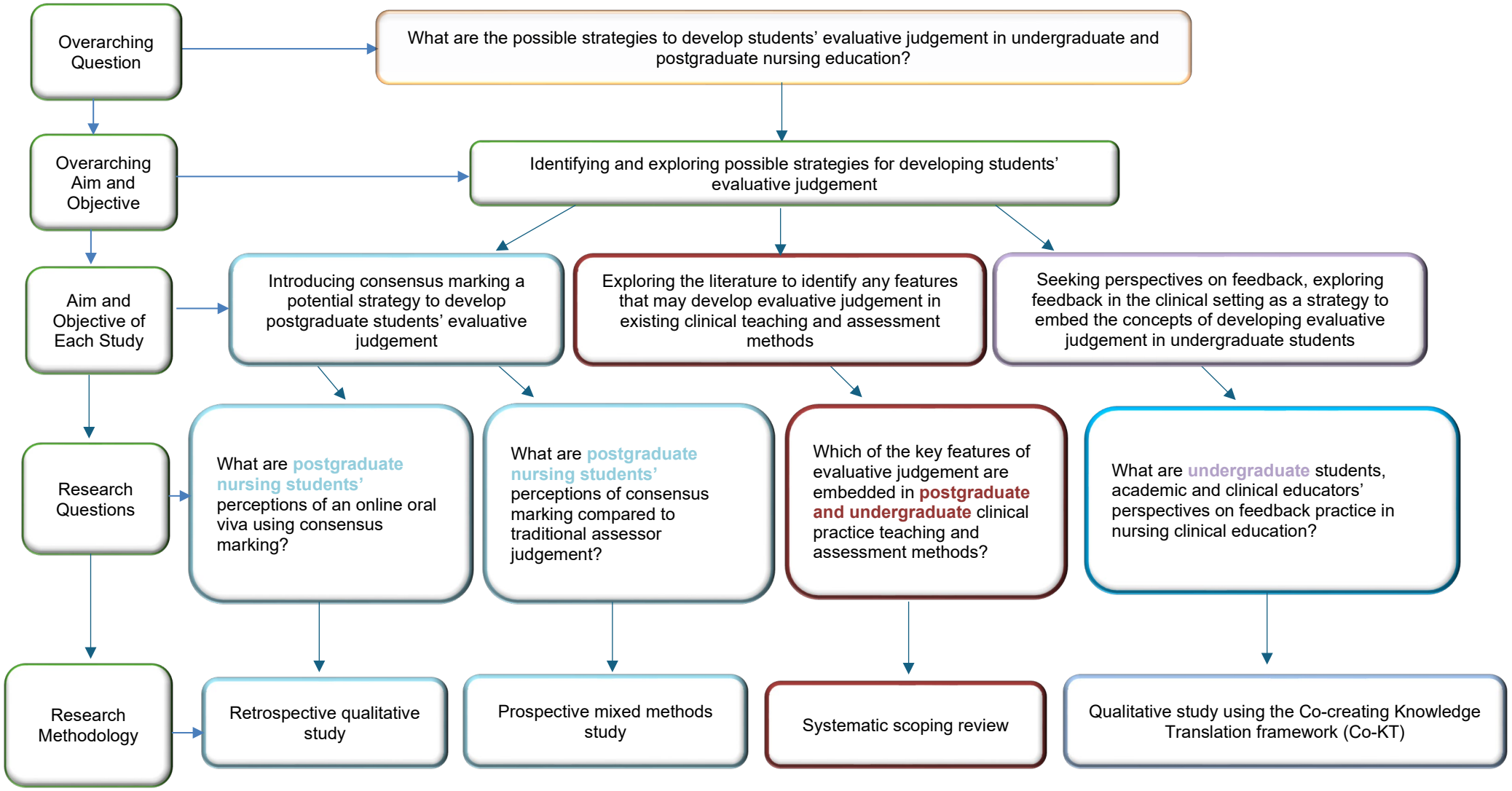
The primary aim of this program of research was to explore various strategies for embedding the concept of developing evaluative judgment within postgraduate and undergraduate nursing curricula, as this is an emerging area of interest in the field. The focus of this program of research, therefore, was on identifying and understanding potential strategies, rather than evaluating their effectiveness, or translation to practice which were not within the scope of this thesis. Future research could build on the findings of this program of research by evaluating the outcomes of these strategies in practice, thereby contributing to a more comprehensive understanding of how to embed evaluative judgment in nursing education. This program of research is structured with four studies. Study one provided an opportunity to qualitatively explore existing data of a novel method of assessment called consensus marking. Consensus marking was an approach that sought to develop students’ evaluative judgement. This first study provided foundational findings which were used to inform a prospective study, study two. Studies one and two (Chapters Four and Five) explore evaluative judgement in postgraduate nursing education in the form of an online viva assessment with consensus marking. While the approach proved effective in developing evaluative judgment in postgraduate students, it was not suitable for the undergraduate cohort due to higher student numbers and reduced time for assessment activities. Therefore, study three (Chapter Six) presents a systematic scoping review aimed at exploring the literature on teaching and assessment methods in clinical practice for both postgraduate and undergraduate nursing students and the presence of evaluative judgement. Finally, study four (Chapter Seven) explores feedback as a process to develop undergraduate nursing students’

evaluative judgement in clinical practice education. A summary of the thesis overarching question, aims and objectives is in Figure 1.1

1.4 Chapter summary

This chapter has provided the personal and contextual background that led me on this research journey and discussed my position in the research, my world view, and teaching philosophy. The philosophical stance of constructivist teaching and learning theory underpinning the program of research, and the scope and structure of the thesis was also discussed. The next chapter provides an overview of nurse education in Australia and critically reviews the current literature on assessment and feedback to provide context and to situate the research within nursing education. An explanation of the concept of evaluative judgement that informed the program of research is also presented.

Figure 1.1 Thesis overarching question, aims and objectives



Chapter Two

Background

This chapter contextualises the program of research by exploring and defining the central concepts. The primary studies in this program of research relate to the Australian context, therefore, an overview of university regulation and nursing education in the Australian setting is provided. This is followed by a review of current assessment and feedback practices in tertiary education, exploring how assessment and feedback can enhance or limit opportunities to develop reflective practice, critical thinking, and lifelong learning skills. Then, evaluative judgement is introduced as a pedagogical concept, outlining its origins, and exploring approaches to develop students' evaluative judgement. Finally, the objectives and significance of the program of research are presented, as well as the research questions.

2.1 Nurse education and accreditation in Australia

Entry to practice nursing education in Australia began as a vocational hospital-based training apprentice model in the early 1900's (Durdin, 2024). In the 1970s, the Commonwealth Government of Australia introduced a universal health scheme (known as Medicare), that included free hospital care for all citizens and a subsidised primary healthcare system (Lowe, 2020a). The introduction of the universal health scheme required a review of nurse education because hospital-based training was considered a significant financial burden (Blewett, 1985). A desire to improve nurse education, and relieve the financial burden on hospitals, resulted in the creation of nursing colleges offering nursing diplomas (Sax, 1979). In 1984, the Commonwealth Government, responsible for the higher education sector in Australia, supported a proposal that resulted in the transfer of nurse education from these colleges to universities (Blewett, 1985). Thus, universities began to offer undergraduate nursing degrees and by 1994; to be eligible for entry to practice as a Registered nurse, all candidates were trained in an accredited course situated within the higher

education setting (Lowe, 2020b). At the same time, the Diploma of Nursing qualifications continued, in Technical and Further Education (TAFE) colleges, and dual sector institutions, as entry to practice courses for registration as an Enrolled Nurse (Lowe, 2020b).

Under Australian national health professional registration and accreditation legislation nursing is a protected title (Storen & Ferris, 2023). This means that it is an offence to use the title of Registered nurse without the associated qualification and registration. Therefore, to be able to use the title of Registered nurse a person must complete an accredited nursing program of study. Accreditation of entry to practice nursing qualifications in Australian universities and TAFE is the responsibility of the Australian Nursing and Midwifery Accreditation Council (ANMAC), an entity appointed by the Nursing and Midwifery Board of Australia (NMBA) (ANMAC, 2024; NMBA, 2024). The NMBA details the minimum standard required of an institution offering entry to practice courses. Nursing students apply to the NMBA for registration as a Registered or Enrolled nurse on successful completion of their Bachelor of Nursing degree or Diploma of Nursing respectively, noting that some universities also offer graduate entry Master of Nursing course that leads to entry to practice and registration. In summary, nurse education has transitioned from vocational hospital-based training to a TAFE Diploma (EN) or university degree (RN) level qualification. Whilst acknowledging the dual levels of nursing practice, this thesis focuses on Registered nurses.

2.1.1 Industry expectations and work ready graduates

An accredited program of study must meet national nursing education standards with curriculum designed in consultation with key stakeholders (ANMAC, 2024). The accreditation process of each program of study is designed to ensure that nurse graduates are prepared with the foundational skills, knowledge, and attributes to be employed as a nurse in a healthcare setting, guided by the national practice standards (ANMAC, 2024). Interestingly, Brooks and Morphet (2021) identified that while graduating Registered nursing students meet the national practice standards, they are not necessarily meeting expectations of industry to be “work-ready”. Similarly, Harrison et al. (2020) explored key stakeholders, (n=67) expectations of work readiness in nursing

reporting that many and varied attributes are anticipated, such as critical thinking, confidence, resilience, commitment to learning, demonstration of safe practice and clinical competency, in addition to the ability to provide care guided by the national practice standards. This suggests that industry, professional regulators, and other key stakeholders' expectations of a graduate nurse is multidimensional (Harrison et al., 2020). The inconsistency between various stakeholders in interpreting work readiness or preparedness for practice requires collaboration and further research to find solutions (Masso et al., 2022). Divergent stakeholder expectations create a complex and often inconsistent standard for graduates to meet. As such, without a clear definition of "work readiness" the concept of what skills and knowledge a nursing graduate should possess on graduation, and entry to practice, will continue to present a challenge for curriculum development (Saghafi et al., 2023).

Graduate attributes

The concept of work readiness is not unique to nursing students. Universities responded to stakeholder requirements for work ready graduates with transferable skills by developing graduate attributes (Hill et al., 2016). Graduate attributes are qualities, skills, and knowledge that students should develop during their time studying at university (Wong et al., 2022). Graduate attributes are common in Australian, New Zealand and United Kingdom universities (Hill et al., 2016; Wong et al., 2022). Each university decides on a set of graduate qualities or attributes that their students should have on completion of their degree. For example, graduate attributes may be that students communicate effectively, work independently, or are critical thinkers and problem solvers. The most stated graduate attributes in Australian universities are self-awareness and lifelong learning (Wong et al., 2022). If students possess such graduate attributes they have potential to future-proof their knowledge and skills post-graduation and throughout their careers (Boud & Falchikov, 2007; Halttunen et al., 2014).

Recent studies have explored assessment and teaching activities that may create the conditions to foster some of the graduate attributes, such as, lifelong learning or critical thinking

(Howells et al., 2016; Schreck et al., 2020; Tan et al., 2022). However, uncertainty remains over how the attributes are contextualised in curriculum and if students apply the attributes once graduated (Aitken et al., 2019; Green et al., 2009).

2.1.2 Nursing qualifications

Within the Australian university sector, most universities offer two streams of nurse education for Registered nurses: undergraduate (entry level qualification) and postgraduate (post entry level qualification). Each will be discussed separately.

Undergraduate

An undergraduate Registered nursing student completes a Bachelor of Nursing degree as their entry to practice qualification (NMBA, 2024). The ANMAC requires that all undergraduate student nurses in Australia engage in theoretical learning and clinical placements (ANMAC, 2016). Clinical placements have also been termed work-integrated learning, professional placements, or workplace experiences (TEQSA, 2022). The clinical placement requirement stipulated by ANMAC is for students to complete a minimum of 800 hours of clinical practice (ANMAC, 2016). The 800 hours are provided as supervised supernumerary clinical placements (ANMAC, 2024). This means that students are not to be employed as part of the workforce while undertaking clinical placements, rather, they engage in facilitated learning activities in the clinical setting supervised by clinicians and educators.

Using Flinders University as an example of an accredited nursing bachelor's degree, students complete 1040 hours of clinical practice equating to 26 weeks of clinical placements. Simulation is not included in the 1040 hours of clinical practice. Students also engage in 600 hours of theoretical content delivered face to face or online. To achieve learning outcomes, they are expected to undertake approximately 1050 hours of self-directed learning activities. In this example, clinical placement represents more than half of students' learning interaction with educators, excluding self-directed learning, which includes preparation for tutorials, assignment

writing or completing online readings and quizzes (Zhang et al., 2022). A similar clinical placement to theory ratio is offered in other Australian universities, and universities in the United Kingdom, Canada, Norway, and other Western European countries (Harlow-Consulting, 2021; Johannessen et al., 2021; Warne et al., 2010).

One aim of clinical learning experiences is to prepare students for their future career with exposure to the authentic professional clinical environment. In the clinical environment, nursing students apply theory to practice with supervision from Registered nurses and clinical educators supporting students in the clinical setting. Clinical practice learning experiences include simulation and clinical placement, equipping nursing students with the skills that help them develop clinical competence (Courtney-Pratt et al., 2014). The aim of simulation is to teach students' clinical skills in a safe environment to prepare for clinical placement. In Australia, the use of simulation does not count towards the minimum of 800 hours of clinical practice required of undergraduate nursing programs (ANMAC, 2024).

Undergraduate nursing programs are foundational qualifications for students to enter the profession. Once registered and practicing as a nurse there are opportunities to specialise, such as, in emergency nursing or aged care. To provide for career progression and support safe, quality health care standards, universities offer postgraduate qualifications to meet employer and public expectations.

Postgraduate

Excepting for some graduate degrees that lead to registration, the majority of postgraduate nursing qualifications provide opportunities for Registered nurses to specialise in a particular field or gain research skills. Students enrolling in postgraduate nursing courses are often working in healthcare settings as Registered nurses (Deakin University, 2024; Flinders University, 2024). Postgraduate qualifications in Australia include, *a Graduate Certificate* (12 months of part-time study), *a Graduate Diploma* (12-18 months full-time), *a Master's degree (*12 – 24 months full-time)

and *a Doctor of Philosophy (PhD)* (36 - 48 months full-time). The postgraduate Certificates, Diplomas and Master's degrees in nursing are often professional and vocational in nature and are referred to as coursework degrees. Professional degrees are designed to prepare students for specific careers by providing the necessary skills and knowledge required in the industry. Vocational degrees focus on practical skills and training directly related to a particular occupation or trade. These programs are therefore referred to as coursework degrees, as they primarily involve structured academic courses and practical training rather than research-based learning. Nurses can also engage in a Master by Research or a PhD which involves a significant and independent research project.

While accreditation by ANMAC for undergraduate programs of study in nursing is robust, there are no regulatory requirements for most specialty postgraduate programs (McKenna et al., 2023). Apart from the Master of Nurse Practitioner, most postgraduate nursing degrees are not a pre-requisite for additional registration and therefore, are not accredited by ANMAC. For example, emergency or critical care nursing degrees do not require accreditation. In other cases, postgraduate courses are accredited by independent associations, such as the Australian Diabetes Educators Association, who accredit the postgraduate diabetes Graduate Diplomas.

Postgraduate qualifications provide Registered nurses with advanced and specialised knowledge and skills as they progress their careers, and postgraduate qualifications provide nurses with career advancement opportunities (Abu-Qamar et al., 2020). A recent systematic review (n=20 studies) suggests that the evidence to support postgraduate qualifications improving patient outcomes and improving nurses' practice is weak (Abu-Qamar et al., 2020). Whilst postgraduate education has potential to improve nurses' knowledge and skills, Abu-Qamar et al., (2020) suggest that more empirical evidence is required to support postgraduate qualifications advancing clinical practice roles, leadership positions and improving patient outcomes.

This section provided a brief overview of nursing education in Australia to provide the context for the program of research. The following section explores assessment an integral component of undergraduate and postgraduate nursing education.

2.2 Assessment

Assessment during a program of study is a function through which others can judge a nursing student's understanding, knowledge, and skill, and can offer learning opportunities. Nursing students must pass both academic and clinical assessments to successfully complete a Bachelor of Nursing degree. The following section explores the different types and functions of assessment, exploring how assessment can enhance or limit opportunities to develop reflective practice, critical thinking, and lifelong learning skills. Nursing students require these skills to make informed, evidence-based decisions in clinical settings, ensuring high-quality patient care and adapting to the ever-evolving healthcare environment (Khalil & Hashish, 2022). This is important background information to explore how assessment methods can be positioned to develop students' evaluative judgement.

2.2.1 Assessment for, as, and of learning

Formative assessment

Formative assessment was defined in Black and Wiliam (1998) seminal work as activities that provide feedback that informs future learning. Formative assessments designed **for learning** provide feedback that feeds forward to future work, supporting students to improve their future work. For example, students use feedback from the first assignment to inform the next assignment activity (Boud, 2000). Formative assessments **as learning** involves students in the assessment process, for example, self-assessment or peer assessment, or engaging in self-monitoring of performance.

Formative assessments for, and as learning, can offer opportunities for students to proactively evaluate and improve their future work, by incorporating feedback provided, reviewing rubrics and reflecting on performance to improve future work (Brenner, 2022; Broadbent et al., 2021; Carless, 2017). Formative assessment offers opportunities to develop students' reflective practice, self-regulated learning, critical thinking, and lifelong learning skills (Boud & Falchikov, 2006, 2007; Broadbent et al., 2021; Carless, 2017).

Summative assessment

Summative assessment is considered an assessment **of learning**. An activity that is used as judgement of a student's performance or knowledge and allocates a grade to what the student learned, for example, a written paper or exam (Irons & Elkington, 2022). Summative assessment such as exams, certifies and quantifies achievement and does not always offer feedback or opportunities to reflect on performance (Broadbent et al., 2018). Students who are focused on gaining high marks and grades to pass a summative assessment, may disregard developing important capabilities of reflection and self-evaluation (Thompson et al., 2015). Whilst summative assessment often motivates students to learn and measures students' performance, such assessments are often not designed to support student learning in a sustainable way or foster lifelong learning skills (Ismail et al., 2022). However, providing students with opportunities to engage in reflective practice, such as through pre-assessment class discussions or the use of exemplars, can help them to 'self-assess' before submitting summative work or participating in summative examinations (Fischer et al., 2024).

The ANMAC require both formative and summative assessments to enhance learning for entry to practice degrees (ANMAC, 2024). Accredited nursing programs must ensure that they meet all the standards outlined in the Registered nurse standards of practice (ANMB, 2016). This requires a blend of both formative and summative assessments, which together foster the development of a diverse range of competencies and skill sets. While evaluative judgment is an important skill for nursing students to develop, it is only one element of the complex skill set

required in nursing. A combination of various assessment methods and ongoing feedback is crucial to address the full spectrum of nursing competencies and support lifelong learning. However, in higher educational settings there is a prevalence of summative assessment, which can stifle the development of students' critical reflective thinking and self-evaluation skills (McGaghie et al., 2020; Oermann & Gaberson, 2014; Siles-González & Solano-Ruiz, 2016). It is not that formative assessment is better, or preferred to summative assessment, as both have their merits. Orientating nursing students' assessments to include more formative, sustainable activities, has potential to achieve the desired graduate qualities of lifelong learning and reflexive practice, qualities that will prepare nursing students beyond the end of the course (Barnett, 2007; Biggs et al., 2022; Boud & Soler, 2016; Lau, 2016; Taras, 2005).

2.2.2 The challenges of self-assessment

Historically, summative, and formative assessment methods have placed students in a passive role, with the student relying on the judgement of others (Boud & Falchikov, 2006; Yan & Boud, 2022). Sustainable assessment theory seeks to shift the focus from students being passive, to active participants, engaging them in activities such as reflection and self-assessment (Beck et al., 2013). However, the value of self-assessment as a mechanism to explore how closely a student can grade their performance against an educator has been questioned (Baxter & Norman, 2011; Davis et al., 2006; Jackson, 2014; Zi, 2022). Baxter & Norman (2011) explored nursing students' (n=32) accuracy in assessing their performance in a simulated emergency reporting that students perceived their ability to be much higher than reported by educators. Further, in a systematic review of 17 studies of doctors' self-assessment, reported that the lower the skill level of the student, the higher the self-rating (Davis et al., 2006). In this study overconfidence was a factor that inflated an individual's ability to accurately self-assess (Davis et al., 2006). Similarly, Jackson (2014) explored how Australian business undergraduate students' (n=1000) self-evaluation was influenced by individual backgrounds and characteristics. This study found that the more capable the student, the more likely they underestimate their ability, and the less competent

students overrated their performance. These findings align with previous research by Boud and Falchikov (1989), who conducted a critical review of self-assessment in higher education, and Lew et al. (2010), who examined self-assessments among 3,588 first-year higher education students. Their studies revealed that self-assessments were closely aligned with teacher ratings, particularly among more experienced and capable students. In contrast, less able and less mature students tended to overrate their abilities, often due to a lack of self-awareness or an understanding of the required standards.

Students' ability to self-assess their work has been raised in psychology as difficult to achieve (Epley & Dunning, 2000; Kahneman et al., 2002; Kruger & Dunning, 1999). There is some concern that students lack the knowledge on how to assess their own work, with unconscious self-serving biases in play (Eva et al., 2018). Self-serving bias, and biased recall, are cognitive processes used subconsciously as mechanisms to limit threatening information and preserve self-esteem (Karpen, 2018). Such attributes are discussed in the literature as significant limitations to students being able to demonstrate unbiased insight into their performance (Dunning et al., 2004; Zhang et al., 2018). Self-assessment as a stand-alone activity that requires students to grade their performance has drawn much criticism, however, more recent investigations highlight that providing students with context, and engaging students in reflective dialogue post self-assessment, may increase the value of self-assessment as a learning activity (Ajjawi et al., 2020; McLeod et al., 2015).

2.2.3 Authentic assessment: clinical practice

Authentic assessment is an evaluation method that measures students' abilities through real world tasks, requiring them to apply their knowledge and skills in practical and meaningful ways. Nursing students are introduced to the real work environment during their clinical placements or work-integrated learning activities. Clinical placements are well positioned to provide opportunities for authentic assessment activities. Authentic assessments assist students to develop their metacognitive skills, preparing them for professional practice (Broadbent & Poon,

2015; Richardson et al., 2012; Sadler, 1989). Whilst there is a substantial body of research on the benefits of contemporary authentic assessment methods in tertiary education (Ajjawi et al., 2020; Boud & Soler, 2016; Carless, 2005, 2007, 2015, 2017; Hawe & Dixon, 2017; Joughin, 2008; Panadero et al., 2019; Sadler, 1989; Villarroel et al., 2018), aligning assignment activities to be authentic can be challenging (Ajjawi et al., 2020). Misalignment occurs when the assessment fails to reflect the students' vision of their future professional self, or the assignment activity does not reflect the activities that occur during clinical placement (Ajjawi et al., 2020). While nursing clinical assessments are based on the NMBA standards for practice (NMBA, 2016), this does not necessarily guarantee that the assessments reflect current practice.

In summary, assessment serves as an evaluation process and can be designed as a learning activity providing opportunities to develop lifelong learning skills, such as self-evaluation and reflection (Boud & Soler, 2016). Assessment, be it authentic, sustainable, formative, summative, as, for, or of learning, is inextricably connected to feedback. Feedback is often viewed as the final function of assessment (Hattie & Clarke, 2018), which can be problematic, as the two activities serve different purposes (Winstone et al., 2022). While assessment and feedback often occur together, they are not co-dependent; it is possible to have one without the other. For example, during a clinical placement, a student may receive feedback on their communication skills or clinical techniques without being formally assessed or graded. Similarly, students may be given a score or grade on an exam without receiving detailed feedback on their specific answers or performance.

The following section explores how feedback can limit or provide opportunities to actively engage students in reflective practice and develop their self-evaluation skills. Understanding how students are provided with, or are engaged in feedback, is important background information to explore the concept of developing students' evaluative judgement in this program of research.

2.3 Feedback

2.3.1 Feedback a partnership, or a hierarchy of telling?

Feedback is a means to provide timely and useful information to assist students' future learning (Hattie & Timperley, 2007). This definition of feedback focuses on the quality and timeliness of feedback, which places the educator at the centre of the process. Feedback 'as telling' often inconspicuously pervades the language used, for example, give, provide, or deliver feedback to students about their performance, and places the student in a passive role (McLean et al., 2015). A didactic teacher-centric approach to telling students what they did wrong and where they can improve is considered an inadequate strategy and does not offer students opportunities to engage in the feedback process, or foster students' ability to self-regulate their learning (Boud & Molloy, 2013a; Henderson et al., 2019a).

More recently, feedback has been defined as a process where students make sense of information to improve their future work or approach to learning changing the focus to a student-centred approach (Carless & Boud, 2018). Contemporary ideas of feedback explore a constructivist methodology, where students are actively engaged on more equal terms with educators, constructing meaning and understanding (Boud & Molloy, 2013b; Carless, 2013; Hausman et al., 2023; Henderson et al., 2019b; Merry et al., 2013). However, despite attempts to move feedback from a hierarchy of telling towards a partnership with students, "old fashioned" ways of engaging with feedback persists, for example, Dawson et al. (2019) in a study of 4514 students and 406 educators, explored perspectives on the purpose and effectiveness of feedback. They found that educators viewed the purpose of feedback as providing students with comments that could improve future work. In contrast, students focused more on the quality of the comments provided by educators and how the comments related to their current work. Both students and educators agreed that feedback is primarily about staff providing comments to students, reinforcing the hierarchical nature of feedback. The study also highlighted a lack of clarity regarding how feedback could lead to tangible improvements in future work.

A lack of time due to workload pressures and student-preceptor relationships were also identified as barriers to effective feedback (Allen & Molloy, 2017). Other barriers such as university policy and processes that fail to support a culture of effective feedback practices may also be influencing factors (Kraut et al., 2015). However, if the focus of feedback remains on the transmission of information to the student from the educator, the active role of students in the feedback process is minimised and does little to develop students feedback literacy skills. As such, feedback practices in universities often fail to offer opportunities to guide student learning and foster lifelong learning skills (Carless & Boud, 2018; Winstone et al., 2022).

2.3.2 Authentic, sustainable feedback – students as active participants

The concept of authentic feedback challenges the view that feedback is an academic output with little regard for student agency (Villarroel et al., 2018). Authentic feedback focuses on the quality and value of feedback in a students' learning journey as a student-centred, sustained, iterative process (Dawson et al., 2021). Feedback that overtly aims to develop lifelong learning skills of reflective practice and critical thinking could be considered as authentic and sustainable. Sustainable feedback requires active student participation and aims to develop students' reflective and self-evaluative skills (Carless, 2013). It is acknowledged that individual students may have different preferences for how they would like to receive their feedback (Glazzard & Stones, 2019), however, feedback dialogue is a feature of sustainable feedback, facilitating opportunities for students to discuss and understand the feedback (Carless, 2013; Mutch et al., 2018). Directive feedback has potential to undermine the goal of fostering autonomy in learning (Dawson et al., 2021). Authentic and sustainable feedback encourages students to take responsibility for their learning without relying on external guidance (Henderson et al., 2019). It could be argued that too much directive feedback could stifle the development of these metacognitive skills and the ability to self-direct (Henderson et al., 2019b). However, this depends on how feedback is framed, if feedback is directive aimed to refine specific clinical skills or to understand the standards for quality work, important for lifelong learning, ideally it should be accompanied by opportunities for self-

reflection (Dawson et al., 2021). Therefore, feedback that is overly prescriptive and does not encourage reflection, may become more of a short-term fix rather than supporting long-term growth.

Verbal feedback is the primary method used to provide information to nursing students during clinical practice education (Henderson et al., 2023). Therefore, the clinical setting has potential to engage students in a feedback discussion, facilitating understanding and application of the feedback. However, Panzieri and Derham (2020) found that nursing students' (n=28) experience of verbal feedback was reported as inconsistent in quality between the different healthcare professionals they encountered on clinical placement. The study also found that the students' perception of the credibility of the feedback received, depended on the relationship they had with the healthcare professional providing the feedback. Research by Allen and Molloy (2016) and a literature review by Johnson et al. (2016) support these findings.

Feedback is often a secondary priority in a busy clinical setting. Lack of feedback skills and rushed feedback sessions at inappropriate times or places are seen as barriers to quality feedback in the clinical environment (Tuma & Nassar, 2022). Whilst there are many feedback models, such as, Pendleton's model (Pendleton et al., 1984), and debriefing models, such as, Debriefing for Meaningful Learning (Dreifuerst, 2015), or Plus-Delta Debriefing (Cheng et al., 2021), that provide useful strategies to support feedback practice, inconsistency and student dissatisfaction with the quality of feedback provided in the clinical setting highlights an evidence-practice gap (Tuma & Nassar, 2022).

This section explored how assessment and feedback practices can either support or hinder students' active engagement in their learning. To enhance assessment and feedback practice the next section introduces evaluative judgement as a pedagogical concept, outlining its origins and exploring approaches to develop students' evaluative judgement.

2.4 Evaluative Judgement

Evaluative judgement as a concept has evolved over the past three decades. At its foundation are ideas of formative, authentic, sustainable assessment, self-regulated learning, and feedback dialogue (Tai et al., 2018). The initial concept of evaluative judgement was introduced by Sadler (1989), who suggested that for students to improve their work, they must develop the ability to judge their work objectively. Black and Wiliam (1998) then explored how formative assessment could be improved, suggesting that teaching and assessment practice should help students recognise when their work is, or is not, at the required standard. Black and Wiliams' work provided a starting point for Boud (2000) who explored the concept of sustainable assessment, an approach that has potential to provide students with lifelong learning skills. The culmination of ideas around assessment and feedback practice that aim to provide students with lifelong learning skills led to the concept of evaluative judgement as defined today by Tai et al. (2018) (Box 2.1).

Box 2.1: Evaluative judgement definition

Evaluative judgement is a characteristic of competency, self-regulation, and lifelong learning (Tai et al., 2018). Evaluative judgement is a capability about "judging the work", for students to reflect on the question - *is the work at the required professional standard?* It is more than judging grades as might be the case in self-assessment (Boud et al., 2015). The term evaluative judgement, has been defined as: ***"the capability to make decisions about the quality of work of self and others"*** (Tai et al., 2018, p.5). Students who develop the ability to make evaluative judgements about the quality of their own, and others' work, are considered to possess the capabilities of a competent practitioner (Tai et al., 2018).

2.4.1 Developing evaluative judgement; why it is important in nursing

On graduating, nursing students no longer have educators to provide them with judgement on their performance, therefore, graduates must be able to identify their knowledge and skills deficits. Whilst some support is initially provided to new graduates by preceptors in the clinical workplace, students are expected to transition to Registered nurses, and as such, they are expected to maintain currency in clinical skills and theoretical knowledge (NMBA, 2016). Critical reflection on knowledge and skills is an important capability for graduate nurses, as rapid advances in technology and medicine require nurses to keep pace with changes to clinical practice (Booth et al., 2021; Qalehsari et al., 2017). Additionally, Zarrin et al. (2023), found that reflective practice positively impacts on nurses' work engagement, self-efficacy, and improves the patient care provided. If Registered nurses are unaware of the quality of their work and unable to identify where their knowledge is deficit, then there is the potential that they become unsafe practitioners (Zaitoun et al., 2023).

Evaluative judgement is the ability to assess the quality of work and to make informed decisions based on that assessment. This skill is foundational in the context of lifelong learning because it underpins the ability to engage in self-directed, continuous learning and improvement. Therefore, the notion of developing nursing students' evaluative judgment is appealing due to the potential to foster students' reflexive practice, self-regulation and lifelong learning skills, nursing graduate qualities that are desired by industry and regulatory bodies (NMBA, 2016). The connection between the concepts of developing students' evaluative judgement, graduate attributes/qualities and regulatory standards for practice are shown in Table 2.1.

Table 2.1 Meeting regulatory requirements by developing evaluative judgement in nursing education

Developing Evaluative Judgement	Registered Nurse Standards for Practice (NMBA 2016)	Most Commonly Stated Graduate Attributes/Qualities	Registered Nurse Accreditation Standards 2019 (ANMAC 2019)
Recognises quality work. Reflects on performance	1.2 develops practice through reflection on experiences, knowledge, actions, feelings, and beliefs to identify how these shape practice	Self-awareness	1.7 The program's progression policies and rules ensure that only students who have demonstrated the requisite knowledge and skills required for safe practice are eligible for clinical placement. For example, reflective practice.
Self-evaluates performance	3.3 uses a lifelong learning approach for continuing professional development of self and others	Lifelong learning	3.5 The program's content and subject learning outcomes ensure: a. achievement of the NMBA Registered nurse standards for practice. For example, 3.3 lifelong learning, 1.2 reflective practice and 3.5 responds to feedback practice
Engages in feedback to calibrate self-evaluation of performance	3.5 seeks and responds to practice review and feedback	Self-awareness	2.2b Promoting high-quality teaching and learning experiences for students to enable graduate competence. For example, supporting students towards feedback literacy

Key features of developing evaluative judgement, reflection, self-evaluation, calibrating understanding of the required standard and feedback (Henderson et al., 2023).

2.4.2 Previous literature on developing evaluative judgement

As evaluative judgement is a new concept in nursing, a review of existing literature was completed to understand how this concept was included in higher education more broadly. Seven databases were searched using terms relating to the Population (students), Concept (evaluative judgement) and Context (higher education) (Appendix 2.1 detailed search strategy). This search was initially completed to inform the program of research, and subsequently updated in July 2024. Excluding the publications arising from this program of research and subsequently presented in

this thesis, 12 primary and 12 secondary research publications were identified exploring the concept of evaluative judgement in higher education.

Most of the primary research studies were from Australia (n=8), with the remaining studies from Hong Kong (n=1), Spain (n=2) and the West Indies (n=1) (Table 2.2).

Table 2.2 Summary of primary evidence exploring the concept of evaluative judgement

Authors Year	Origin	Research design	Critical appraisal	Population & sample size	Findings
Bearman et al 2022	Australia	Qualitative	80%+	General Practitioner trainees (n=16) PG	A combination of reflective practice and feedback conversations informed by relevant quality information about their performance may help the trainees develop evaluative judgement. However, the feedback conversation in isolation did not necessarily assist trainees to develop evaluative judgement.
Cano Garcia et al 2024	Spain	Qualitative	70%+	Education students (n=114) not identified as PG or UG	Peer feedback strategies could be one way of developing evaluative judgement.
Chen et al 2022	Australia	Qualitative	80%+	Molecular genetics students honour class (n=298) UG	Engaging students more actively with identifying standards and using the criteria representing those standards may promote evaluative judgement. Exposing students to their peers' work supported them to recognise quality work through comparison.
Chong 2021	Hong Kong	Qualitative	80%+	IELTS writing workshop (n=129) UG	The use of dialogic exemplars supports students to understand the assessment standard. As such has potential to help develop their understanding of what good work looks like.
Fischer et al 2024	Australia	Qualitative	80%+	Physics students (n=5) UG	The findings do not show students' evaluative judgement developing or how they 'came to practice differently', it showed that, across the curriculum, summative assessment tasks require students to make decisions about quality as they navigate their course, even if these decisions are made idiosyncratically.
Fitzgerald et al. 2021	Australia	Quantitative	67%*	Osteopathy students (n=56) UG	Self and peer assessment and faculty feedback improved performance and increased congruence of students self- and peer-assessment marks, potentially developing their evaluative judgement skills.
Gyamfi et al 2022	Australia	Quantitative	67%*	Students in a database principles course (n=354) UG	Rubrics have a positive but slight impact on students' ability to make judgements about the quality of resources. The ability of students to not only rate the quality of the resources but also give comments to justify their ratings demonstrates their application of evaluative judgement.
Ibarra-Saiz et al 2020	Spain	Quantitative	67%*	Economics & business sciences students (n=301) UG	The findings of this study identify how evaluative judgement, in terms of trust in one's own judgement and in the judgement of others, is directly related to students' competence development.
McIver & Murphy 2023	Australia	Qualitative	80%+	Healthcare students (n=42) surveys (n=6) student interviews PG. (n=5) staff interviews	Self-assessment provided meaningful feedback. For students, this meant comments that helped them judge the quality of their own work.
Nicola-Richmond et al 2024	Australia	Qualitative	80%+	Occupational therapist students (n=21) UG	Students used a range of strategies for practising evaluative judgement, including making comparisons, acting on feedback, and reflecting on practice.
Ramlogan & Raman 2022	West Indies	Quantitative	78%*	Dental students (n=55) UG	Self-assessment requires clear guidelines, training strategies, feedback, and reflection to support students to develop their evaluative judgement.
Tai et al 2016	Australia	Mixed methods	90%+ 67%*	Medical students (n=10) observed & interviewed (n=1189) questionnaire UG	Peer assisted learning contributes to the development of evaluative judgement; further steps could be taken to formalise peer assisted learning in clinical placements to improve learners' capacity to make accurate judgements on the performance of self and others".

Key: PG Postgraduate; UG Undergraduate; * JBI Checklist for Quantitative studies; + JBI Checklist for Qualitative studies

Six of the primary studies exploring the concept of developing students' evaluative judgement were in health disciplines, including allied health (n=3), medicine (n=2), and dentistry (n=1). The remaining six studies explored evaluative judgement in non-health disciplines including, education, molecular genetics, language, database principles, economics and physics. These primary studies used qualitative, (n=7), quantitative (n=4), and mixed methods (n=1) research methodologies. Only two primary research studies were situated in postgraduate education with ten being situated in undergraduate education.

The secondary research publications originated from Australia (n=9), Switzerland (n=1), Spain (n=1) and the United Kingdom (n=1) (Table 2.3). The majority were theoretical discussion papers (n=5), followed by systematic reviews (n=2), concept papers (n=3) and two case study discussion (n=2). Only one publication a systematic review, was identified that focused on nursing (Ilangakoon et al 2022).

To evaluate the rigor, credibility and relevance of each study, critical appraisal was conducted, using Johanna Briggs Institute (JBI) critical appraisal tools specific to the study designs (Johanna Briggs Institute 2024). As JBI does not provide a mixed methods appraisal tool, the one mixed methods study by Tai et al., (2016), was appraised using both qualitative and quantitative tools. Critical appraisal scores are represented as a percentage of the total maximum possible score for the relevant tool in Tables 2.2 and 2.3, and the full critical appraisal tables are provided in Appendix 2.2.

Table 2.3 Summary of secondary evidence exploring the concept of evaluative judgement

Authors Year	Origin	Research design	Critical appraisal	Discipline area	Findings
Bearman et al 2024	Australia	Conceptual paper	100%#	N/A	Learners need to apply human judgement to AI outputs as such AI can be a partner in the development of human evaluative judgement capabilities.
Bertram & Tomas 2023	United Kingdom	Redesign of a module	83%#	Chemistry degree module UG	Recommendations were to introduce activities to develop students' evaluative judgement, reduce the summative assessments in favour of formative assessments, engaging students in understanding quality and criteria, develop self-assessment skills, and enhance transparency of assessment.
Bonvin et al 2022	Switzerland	Redesign of a course	83%#	Medical degree course UG	Redesign of a medical degree course using only formative assessment. Reflective portfolios were used where students could evaluate their performance. This paper used some principles of developing evaluative judgement, formative assessment, reflection and feedback practices, in the design of the bachelor's
Boud et al 2018	Australia	Theoretical discussion	100%#	N/A	A collection of work exploring the theoretical concepts of developing evaluative judgement
Gladovic 2021	Australia	Discussion/ conference paper	50%#	N/A	"Self-assessment, peer-assessment and portfolios are more likely to contribute to the development of evaluative judgement.
Ilangakoon et al 2022	Australia	Systematic review	90%^	Students Nursing, midwifery, healthcare professionals (n=18 included studies) UG and PG	The findings highlighted that the feedback – evaluative judgement relationship is new in nursing education. The authors suggest that educators design feedback activities that place students as active participants in dialogic feedback, reflection, and self-assessment to develop their evaluative judgement
Molloy et al 2020	Australia	Discussion	100%#	Healthcare students not identified as PG or UG	The effects of feedback may be immediate or latent and it may change learners' evaluative judgement or professional identity.
Naidoo et al 2021	Australia	Discussion	50%#	Occupational therapy students UG	The use of peer-assisted learning, rubrics, self-assessment, and feedback methods were discussed as opportunities to develop evaluative judgement.
Panadero et al 2019	Spain	Concept Paper	100%#	N/A	Self and peer assessment is conceptualised as developing evaluative judgement needs further theorising using models of self-regulated learning. The authors believe that a pedagogy that emphasises the teaching of self-regulatory skills aligned with the development of evaluative judgement will help students practice and master key lifelong learning skills
Rung & George 2021	Australia	Systematic review	100%^	Dental students and educators (n=12 included studies) not identified if UG or PG	"Assessment and feedback are regarded crucial for developing students' evaluative judgement to become self-regulated lifelong learners. However, there is limited empirical evidence".
Sadler 2010	Australia	Concept paper	100%#	Higher education students not identified as UG or PG	Exploring feedback to develop students' capabilities
Tai et al 2018	Australia	Discussion Theoretical paper	100%#	N/A	Exploring the historical development of evaluative judgement exploring the pedagogy and ways to integrate the concept into teaching practice.

Key: PG Postgraduate; UG Undergraduate; ^ JBI Checklist for Systematic reviews; # JBI Checklist for Expert opinion

For the primary research evidence, all studies including a qualitative component (n=8) consistently demonstrated congruity between the philosophical perspective, research methodology, research questions, data collection methods, analysis and interpretation of the results, ensuring a coherent and methodologically sound approach. Only one study explored the influence of the researcher on the research (Tai et al., 2016). None of the qualitative studies provided a statement locating the researcher culturally or theoretically. For the studies with a quantitative component (n=5), all five used reliable measures and appropriate statistical analysis demonstrating credibility of the results. However, only two studies had a control group (Fitzgerald et al., 2021; Gyamfi et al., 2022) and only two studies explored pre and post intervention comparisons (Ibarra-Saiz et al., 2020; Ramlogan and Raman 2022). The limited use of control groups and pre and post comparisons suggests a need for more rigorous experimental designs to assess causal relationships and the effectiveness of the interventions in this area.

For the secondary evidence (Table 2.3), critical appraisal of the systematic literature reviews (n=2) demonstrated that both reviews clearly stated the objectives, had appropriate inclusion and exclusion criteria and search strategies. These reviews minimised errors and bias in extraction and used multiple reviewers thereby enhancing the reliability of the findings (Ilangakoon et al., 2022; Rung and George 2021). The only identified paper in nursing, the systematic review by Ilangakoon et al., (2022) scored highly in the appraisal, meeting all criteria except for assessing the likelihood of publication bias in the included studies. The two papers that reported case studies were discussion based focusing on educational improvements to modules and curricula (Betram and Tomas 2023; Bonvin et al., 2022), therefore, the expert opinion appraisal tool was chosen as the best fit for these papers. A critical appraisal of papers that expressed expert opinion (n=10) indicate a strong adherence to identifying credible sources and all but four of the authors had a strong standing in the field of expertise.

The primary studies explored peer and self-assessment, feedback, and different ways to help students identify what quality work looks like, such as, comparison to peers' work, rubrics and

exemplars as strategies to develop students' evaluative judgement. Five studies explored peer assessment and peer feedback (Cano García et al., 2024; Chen et al., 2022; Fitzgerald et al., 2021; Ibarra-Sáiz et al., 2020; Tai et al., 2016). Cano García et al. (2024) reported that the quality of peer feedback provided by students in an education subject improved over time, suggesting that this may be an indication of students developing their evaluative judgement. Chen et al. (2022) found that when students understood the required standards, they were able to apply the required standards to accurately critique peers' work. The authors suggested that if students understand the standards and have opportunity to apply the standard to others' work, this may develop their evaluative judgement. Similarly, Fitzgerald et al. (2021), Ibarra-Sáiz et al. (2020), McIver and Murphy (2023), Ramlogan and Raman (2022), and Tai et al. (2016) provided research on peer and self-assessment, suggesting that evaluative judgement might be developed through approaches that help students understand what quality work looks like and applying that understanding to their own, and others' work. The methods used to support peer and self-assessment, and feedback were PeerWise software (Chen et al., 2022), the Feedback Mark 2 model (Fitzgerald et al., 2021). Cano Garcia et al., (2024) used the feedback cycle based on the model proposed by Carless (2019).

Two studies explored approaches to help students understand the required standard. Gyamfi et al. (2022) reported that rubrics helped students in a database principles subject make judgements about the quality of peers' work. Chong (2021) explored dialogic exemplars in an English language writing workshop reporting, this method to be useful in supporting students' understanding of what the required expectations were for quality work. Whilst these studies showed an improvement in students' ability to judge their and others' work using these means, limited detail was provided on how these resources were designed. In addition, there was no clarity on whether students were using other resources in addition to rubrics or exemplars to make decisions about the quality of work (Nicola-Richmond et al., 2024).

Nicola-Richmond et al. (2024) found that occupational therapy students used a range of cues to understand the expected standard, such as, acting on feedback from educators and peers, reviewing the results of their placement assessment activities, making comparisons with others work, and engaged in reflective practice. Similarly, Fischer et al. (2024) used an ethnography-informed approach to establish that discussions with peers and educators and summative assessments inform students evaluative judgements. Finally, general practitioner trainees were shown by Bearman et al. (2022) to draw on tacit ways of knowing, such as emotional responses of feeling uncomfortable that something was wrong. In this study, the trainees reported drawing on supervisors, senior colleagues, patient data and "gut feelings" to calibrate their understanding of the quality of their work. A "feedback community" was suggested to develop evaluative judgement where general practitioner trainees sought out trusted or credible feedback from multiple sources. Interestingly, feedback conversations with supervisors did not necessarily help trainees develop their evaluative judgement. However, as the participants in this study were qualified medical practitioners, their self-regulated learning may be more developed, therefore, the findings may not translate to undergraduate students or other disciplines.

Whilst rubrics and exemplars have been shown to be useful resources to help students recognise the standard of good work, students may use a wider range of information to make evaluative judgements. These primary studies provide empirical support for the conceptual work by Bearman et al. (2024), Bertram and Tomas (2023), Bonvin et al. (2022), Gladovic (2021), Molloy et al. (2020), Naidoo et al. (2021), Sadler (2010) and Tai et al. (2018), who suggest that active engagement in recognising what quality work looks like can develop students' evaluative judgement.

Cultivating a sustainable feedback culture and using feedback conversations has been identified as important in the process of refining students' understanding of what good work looks like (Bearman et al., 2022; Bonvin et al., 2022; Chen et al., 2022; Ilangakoon et al., 2022; Molloy et al., 2020; Rung & George, 2021; Tai et al., 2016). These authors suggest feedback conversations

that actively engage students in reflecting on their work might support the development of evaluative judgement. The concept of trust and credibility for students to engage with feedback was also raised by Ibarra-Sáiz et al. (2020) and Tai et al. (2016), suggesting that for feedback to be effective in supporting students to develop their understanding of what quality work looks like, the relationship between student and educator was important.

Only one publication was identified in nursing, an integrative systematic review by Ilangakoon et al. (2022). The authors Ilangkoon et al., (2022), did not find any literature in nursing or midwifery that explicitly used the term ‘evaluative judgement’. The aim of this systematic review was to explore the relationship between current feedback methods and the concepts of evaluative judgment in undergraduate nursing and midwifery education. Seven themes were identified to help recognise the relationship between feedback and evaluative judgement (conceptions of feedback, purposes of feedback, sources of feedback, modes of feedback, conceptions of evaluative judgement, purposes of evaluative judgement and relationships between feedback and evaluative judgement). The authors suggest that feedback should be used to develop nursing students’ evaluative judgement. However, it was also acknowledged that further research exploring feedback designs in nursing and midwifery education is needed to explore the concept of developing evaluative judgement through feedback.

In summary, the previous literature exploring the concept of developing evaluative judgement consists of a combination of primary and secondary research designs and is predominantly focussed on peer and self-assessment, ways to help students understand what quality work looks like, and feedback conversations, as methods that have potential to foster students’ evaluative judgement. The current view on developing evaluative judgement suggests that the following elements are important: discerning quality (recognising what quality work looks like), judgement process (self- and peer-assessment/evaluation), and feedback conversations. However, there is limited evidence to support how educators adopt the concept of developing evaluative judgement in teaching and learning activities, assessment or feedback. To the best of

our knowledge, prior to this program of research, there were no published primary studies investigating the development of evaluative judgement in nursing education.

2.5 The objective and significance of this program of research

University graduate attributes, industry expectations and regulatory bodies expect that nursing students enter the workforce as critical reflective practitioners, possessing lifelong learning skills. Evaluative judgement is a concept that is well situated to provide such skills. There is limited research evaluating methods that embed the concept of evaluative judgement in teaching, assessment, or feedback practice. Prior to this program of research, there was no primary empirical evidence regarding the development of undergraduate or postgraduate nursing students' evaluative judgement.

The program of research presented in this thesis addresses the gap in the literature. The overarching goal of this program of research was to explore the concept of developing evaluative judgement in nursing education.

2.5.2 Research aim and questions

The overarching question for this program of research was "What are the possible strategies to develop students' evaluative judgement in undergraduate and postgraduate nursing education?" The primary aim of this program of research was to explore various strategies for embedding the concept of developing evaluative judgment within postgraduate and undergraduate nursing curricula. To address the overarching question and aim, a series of four studies were undertaken. The first two studies explored the concept of developing evaluative judgement in postgraduate nursing education. Studies three and four then explored the concept more broadly in undergraduate nursing education, and specifically in clinical practice education settings.

Study one retrospectively explored postgraduate nursing students' perceptions of an online oral viva using consensus marking as an assessment grading method designed to develop

students' evaluative judgement. The research question was: "*What are postgraduate nursing students' perceptions about their experience of online oral viva examinations using consensus marking?"*

Study two used a convergent mixed methods parallel research design to prospectively explore student perceptions, anxiety and satisfaction levels with consensus marking compared to traditional grading methods. The research question was: "*What are postgraduate nursing students' perceptions, anxiety and satisfaction of consensus marking compared to traditional assessor judgement?".*

Study three was a systematic scoping review, to identify the features that aligned with developing evaluative judgement in nursing clinical practice education. The review question was: "*Which of the key features of evaluative judgement are currently embedded in clinical practice teaching and assessment methods?".*

Study four used a qualitative design to explore nursing student, academic and clinical educator perceptions of good feedback practice to improve feedback in clinical practice settings, using an evaluative judgement lens. The research question was: "*What are student, academic and clinical educators' perspectives on current feedback practice in nursing clinical education and how do they align with the concepts of developing evaluative judgement?".*

2.6 Summary

This chapter presented a summary of the provision and regulation of nursing education in Australia, and a brief overview of undergraduate and postgraduate degrees, to provide context to situate the research. A review of the current literature on assessment methods and feedback practices exposed how they limit or provide opportunities to engage students in meaningful experiences that prepare them for their future professional role. The concept of developing evaluative judgement was discussed, highlighting the important elements required to foster

students' evaluative judgement, and exposed the gap in the literature that this program of research will explore.

The next chapter, Chapter Three, outlines the research design choices, exploring the underpinning philosophies and that inform the research approach.

Chapter Three

Methodology

This chapter outlines the research design choices and methods employed to explore the overarching research question for the program of research, “What are the possible strategies to develop students’ evaluative judgement in undergraduate and postgraduate nursing education?” The chapter begins with an overview of the underlying educational philosophies of constructivism and pragmatism that informed the overall research approach, followed by an outline of the interpretivist inductive approach used in studies one, two and four, and the positivist deductive approach used in study three, discussing how each approach aligned with the outlined philosophies. An overview of the limitations and strengths of the methodological approach is then presented. The aim of this chapter is to ensure transparency and rigor in the research process, aligning the methodology with the aims and objectives of the program of research, that includes the peer reviewed publications presented in Chapter Four (study one), Chapter Five (study two), Chapter Six (study three), and Chapter Seven (study four). Each peer reviewed study in this program of research includes detailed Methods sections. The intent of this chapter is to provide background information regarding the underlying philosophies and methodological approaches used in each of the studies, rather than repeating the detailed individual study methods.

3.1 Philosophical foundations: constructivism and pragmatism

This program of research drew on two key philosophical paradigms, constructivism and pragmatism (Dewey, 1997; Piaget, 1971). This philosophical view influenced the design and methods employed in each of the studies that explored different aspects of evaluative judgment, as it applies, or could be applied to nursing education. Both constructivism and pragmatism emphasise the active role of learners in constructing knowledge and making decisions based on

evidence, experience, and context (Boud et al., 2018; Tai et al., 2018) and so are aligned with evaluative judgement, which shares this emphasis.

3.1.1 Constructivism

Constructivism is a learning theory that emphasises the idea that individuals actively construct their own understanding and knowledge of the world, based on their experiences, interactions and reflections (Piaget, 1970; Vygotsky, 1978). Key aspects of constructivism in education explored by Brooks & Brooks (1993), Jonassen (1991), and Mascolo & Fischer (2205) include:

Active Learning: Constructivism highlights the importance of learners actively interacting with content and information provided, merging new knowledge with what they already know, rather than the passive absorption of facts. This approach fosters a student-focused learning environment, where learners are motivated to investigate, ask questions, and contemplate their understanding.

Social Interaction: Constructivist theory suggests that learning is significantly improved through social interactions. In collaborative settings, learners participate in discussions, exchange ideas, and critically evaluate each other's thoughts. This process helps them deepen their understanding to refine their perception of what quality work looks like (Boud et al., 2018).

Contextual Learning: Understanding is viewed as being contextual and situated, suggesting that learning is often connected to real-life scenarios. Learners develop knowledge through hands-on experiences that are pertinent to their personal lives and fields of study. Consequently, offering genuine assessment tasks aids nursing students in applying their knowledge to their future professional roles (Epp et al., 2021).

Problem-Solving and Inquiry: Constructivism promotes learning through activities like problem-solving, inquiry, and exploration, which are in line with teaching methods that foster critical thinking, reflection, and the practical application of knowledge.

Constructivism supports the idea that students can develop their evaluative skills through hands-on experiences, reflection, and social learning (Jonassen, 1992; Piaget, 1970; Vygotsky, 1978). This suggests that as nursing students engage with real-world cases or simulations, peers and educators, they actively construct their understanding of how to assess and judge their knowledge and skills in clinical situations (Epp et al., 2021).

3.1.2 Pragmatism

Pragmatism prioritises practical outcomes and real-world applications (James, 1907; 1975; Farjourn et al., 2015; Ormerod, 2006; Thompson, 1997). John Dewey's contributions to pragmatism transformed the way educators approached teaching and learning (Dewey, 1997). Dewey (1997) emphasised that education should be an interactive, experiential process, where students engage in meaningful activities that promote problem-solving, critical thinking, and self-reflection. The philosophical stance of pragmatism is that truth is not seen as fixed or absolute. Instead, truth is viewed as something that evolves through experience and action (Dewey, 1997).

Key aspects of pragmatism in education as explored by Dewey (1997) and Ormerod (2006) include:

Active Learning: Education should be an active process where students are able to interact with the content or activities in a way that promotes exploration, inquiry, and critical thinking, rather than just passively absorbing information.

Real-World Relevance: Learning should be relevant to students' lives and future roles. For example, nursing students should learn through scenarios that simulate real-world clinical environments, allowing them to use their knowledge to solve practical issues.

Collaborative Learning: Pragmatism promotes teamwork and social engagement as integral parts of the learning process. Through activities like discussions, group projects, and shared experiences, students can enhance their understanding of the subject matter.

Continuous Reflection: Students should be encouraged to reflect on their learning experiences, making sense of the knowledge they gain and considering how they can apply it in different contexts. For the nursing profession, reflection is not only a career long asset to developing expertise in a chosen field of practice but is also a requirement for meeting the Standards of Practice for the Registered Nurse (NMBA, 2016), which are a requirement for initial and continuing registration.

3.2 Constructivism and pragmatism: A framework guiding the research

Constructivism and pragmatism provide a robust framework for understanding and enhancing education, especially in fields such as nursing, where practical skills and critical thinking are essential (Mayumi & Ota, 2023). These underpinning philosophies have guided the research studies that set out to explore the overarching research question: “what are the possible strategies to develop students’ evaluative judgement in undergraduate and postgraduate nursing education?”

The educational philosophy of constructivism aligns with the concept of developing students’ evaluative judgement as students are encouraged to actively construct meaning through opportunities to reflect, self-assess, and calibrate their understanding through interactions with others (Boud et al., 2018). Combined with pragmatism’s focus on real-world application and problem-solving, the two philosophical paradigms were integral to this program of research, as the overarching aim was to seek practical strategies to help students develop evaluative judgment and identify strategies that educators could use or adapt to support student teaching and learning activities.

3.3 Overview of methodological approaches used in the studies

This section provides an overview of the interpretivist inductive methodological approach used in studies one, two and four, and the positivist deductive approach used in study three.

3.3.1 Interpretivism

To explore strategies that develop students' evaluative judgment, an interpretivist research approach was adopted. This approach is rooted in the belief that reality is socially constructed and can be best understood through the meaning individuals attach to their experiences (Black, 2006). Interpretivism is an approach that focuses on understanding the meaning behind human actions, beliefs, and experiences (Creswell, 2008). Interpretivist research aims to understand phenomena within their specific context, emphasising the importance of the setting, culture, and experiences of individuals and avoiding imposing preconceived theories or standardised outcomes (Pervin, 2022).

3.3.2 Interpretivism: an inductive approach

Interpretivism served as the critical lens through which the program of research aimed to understand the experiences and perspectives of nursing students, clinical educators, and academics in multiple learning contexts. Using this methodological approach the research studies presented in Chapters Four, Five, and Seven, aimed to provide foundational information on how educators can best support students in becoming more autonomous, reflective, and self-regulated in their practice, by adopting strategies to develop evaluative judgement in different learning situations and with a range of nursing student cohorts. Using an inductive approach to explore participants' perspectives in these studies, themes arising from the data generated insights into how different assessment and feedback methods could develop evaluative judgement. Since evaluative judgment involves complex decision-making, shaped by a range of factors (including personal, social, and cultural contexts), interpretivism using an inductive approach was well-suited for exploring these subjective and context-dependent processes (Cohen et al., 2011; Proudfoot, 2023).

3.3.3 Positivism: a deductive approach

In the third study (Chapter Six), a positivist deductive approach was taken to systematically scope the literature on teaching and assessment methods in nursing clinical education. While a deductive approach is objective and systematic, providing clear evidence that either supports or refutes a hypothesis, it can also be enriched through the lens of constructivism and pragmatism (Foster 2023). From a constructivist perspective, the process of systematically scoping literature involves recognising that researchers actively build knowledge by connecting new information to existing understandings (Gutierrez-Bucheli 2022). The systematic scoping review categorised and summarised information, not just as isolated facts, but as evolving concepts that reflected a deeper understanding of which key features of developing evaluative judgement were present in current teaching and assessment methods, and which were absent. By synthesising existing literature based on predefined criteria, the deductive approach provided measurable, evidence-based conclusions that were not only theoretical but also had practical relevance for educators and students in clinical settings.

Together, constructivism and pragmatism underscore the importance of synthesising knowledge in a way that is both reflective and oriented toward practical improvements (Dewey, 1997; Jonassen, 1991). While the inductive approach provided insight into participants' experiences and perspectives, the deductive approach ensured that conclusions were evidence-based and objective. Using both philosophical perspectives deepened the researcher's understanding of how teaching and assessment methods in nursing clinical education can be adopted or refined to better support students to develop evaluative judgement.

3.4 Strengths and limitations of the methodologies used

The strengths and limitations of each individual study is detailed in Chapters Four, Five, Six and Seven. In line with the intent of this chapter to provide an overview, this section explores how

a mix of methodologies and underlying philosophical perspectives, provided several strengths and some limitations for the overall program of research.

3.4.1 Strengths

An inductive approach, from the interpretivist studies presented in Chapters Four, and Seven allowed for exploratory insights and the development of theories grounded in the data. This approach is particularly useful for understanding complex social phenomena such as nursing education where human behaviours and interpretations are central (Epp, 2021). The mixed methods study presented in Chapter Five, integrates qualitative and quantitative data, helping to bridge gaps between subjective experiences and objective measurements. The deductive approach used in the systematic scoping review, presented in Chapter Six, ensured that this study was driven by existing theoretical frameworks, which helped to provide clear, objective evidence to guide future research or practice. By combining multiple methodologies (qualitative, mixed methods, and a systematic scoping review), this program of research provided a complete and nuanced understanding of the potential strategies that can be used to develop nursing students' evaluative judgement.

3.4.2 Limitations

The interpretivist (inductive) studies focussed on understanding meanings, context, and social constructions, which does not align seamlessly with the deductive approach of the systematic scoping review that explored the evidence for the key features of developing evaluative judgement. The interplay between the systematic scoping review and the final qualitative study presents some challenges, particularly around the different approaches to evidence synthesis (Proudfoot, 2023). While the systematic scoping review was valuable for mapping the existing literature and identifying gaps, its deductive nature may not fully capture the nuanced, contextual, and socially constructed aspects central to interpretivist qualitative inquiry. However, the value of the systematic scoping review in identifying which key features of evaluative judgement were

commonly used in teaching and assessment methods, and which key features were missing, was foundational quantitative information to support the aim and focus of the final qualitative study.

The qualitative studies in this program of research were more vulnerable to researcher bias, as they relied on interpretations of subjective experiences (Polit & Beck, 2014). Moreover, the qualitative studies may not represent the diversity of the population due to the purposeful and convenience sampling methods used (Morse et al., 2002). However, each study presented in Chapter Four, Five, Six and Seven, provided details on how researcher and sampling bias were mitigated. Finally, the qualitative studies focussed on specific contexts and contained small sample sizes, meaning their findings might not be easily generalisable to broader populations or settings.

3.5 Conclusion

This chapter demonstrated that the philosophical underpinnings of constructivism and pragmatism, guided the methodological choices and approaches across the four studies in this program of research. By combining interpretivist inductive approaches in studies one and four, a mixed methods approach in study two, and a positivist deductive approach in study three, this program of research embraced the strengths of qualitative, mixed methods, and quantitative methodologies, to explore the overarching research question: “What are the possible strategies to develop students’ evaluative judgement in undergraduate and postgraduate nursing education?”

Chapter Four

Postgraduate nursing students' perceptions of consensus marking with online oral vivas: a qualitative study.

As published in Nurse Education Today

Henderson, B., Aitken, R., Lewis, L. K., & Chipchase, L. (2021). Postgraduate nursing students' perceptions of consensus marking with online oral vivas: A qualitative study. Nurse Education Today, 101, 104881–104881. https://doi.org/10.1016/j.nedt.2021.104881

This chapter presents a peer reviewed paper titled: “Postgraduate nursing students’ perceptions of consensus marking with online oral vivas: a qualitative study*”* published in *Nurse Education Today (Scimago Q1 – top 10%, 10/172 Nursing miscellaneous, Impact Factor 3.9, H-index 92)*. This retrospective study introduced a new grading method for an oral viva exam called consensus marking. Consensus marking is underpinned by the concepts of developing students’ evaluative judgement. The first part of this chapter provides additional context which was not included in the published article. This is then followed by the Word-formatted full publication

An authorship declaration is included in Appendix 4.1. The publication is reproduced with the journal permission Appendix 4.2. Please refer to Appendix 4.3 for the PDF version of the article, as published in *Nurse Education Today*.

4.1 Additional context

4.1.1 Postgraduate emergency nursing students

Whilst the initial impetus to conduct this program of research was due to an undergraduate nursing student, when I started the PhD program of research I was redesigning and teaching a postgraduate emergency nursing course. This provided an ideal opportunity to explore strategies to develop students’ evaluative judgement in a small cohort of students before potentially expanding to larger undergraduate numbers. At the time, the final summative assessment in a topic I coordinated was an online oral viva, an authentic assessment method designed to motivate learning. I was aware from the literature (explored in 4.3.1 background) that conducting online oral viva exams were under researched. Therefore, it was important to explore if the oral viva in the online setting was still considered by the students to be an authentic assessment method. It was also important to explore student perceptions about consensus marking as a self-assessment grading method.

4.2 Abstract

Background: Authentic assessment design that fosters self-reflection and evaluation seeks to develop evaluative judgement; a capability required of Registered nurses. A new method of grading, known as consensus marking, was introduced to an online oral viva that required postgraduate nursing students to evaluate and reflect on their performance and grade their level of competence in collaboration with the assessor. This study aimed to explore postgraduate nursing students' perceptions about their experience of online oral viva examination and the use of consensus marking.

Design: A qualitative study using retrospective student interviews.

Methods: A retrospective, thematic analysis of open-ended questions from students who had participated in an online viva using consensus marking that was recorded for assessment and quality improvement.

Results: Postgraduate emergency nursing students perceived that the online viva while creating some anxiety was relatable to their workplace and overall, they preferred this assessment method to others. Students perceived that consensus marking enabled self-evaluation and reflection, provided an opportunity for beneficial critical reflective discussions, and facilitated a positive shift in the power dynamics between the student and assessor.

Conclusions: The online oral vivas provided an authentic assessment method that, despite causing anxiety, was preferred to written assessment. The students perceived that consensus marking provided an opportunity to reflect and engage in bidirectional feedback dialogue with the assessor in a collegial discussion. Further research is required to evaluate the use of consensus marking in other assessment designs.

4.3 Introduction

Nurses once qualified and inducted into their profession, are expected to be reflective practitioners capable of making judgements of their performance to maintain and develop clinical skills and knowledge (Chaffey et al., 2012; Delany et al., 2013; McLeod et al., 2020; NMBA, 2016; Platzer et al., 1997; Taylor, 2006). The capability to make decisions about the quality of the work of oneself and others is known as evaluative judgement (Boud and Soler, 2016). Evaluative judgement is one goal of higher education that develops students and clinicians' ability to appraise their work and identify future learning needs (Tai et al., 2018). Providing learning and teaching opportunities that develop post-graduate nursing students' ability to be reflexive practitioners is fundamental to clinical practice and lifelong learning.

4.3.1 Background

Online oral viva

Assessment design is critical to enable students to develop evaluative judgement and other fundamental capabilities, such as self-reflection (Tai et al., 2018). In undergraduate and postgraduate nursing education, authentic assessment tasks provide an opportunity for students to apply academic knowledge to the context of their future or current workplace (Chong et al., 2016; Raymond et al., 2013; Wu et al., 2015). The oral viva is believed to be an authentic assessment of deep learning, applying and synthesizing knowledge and high-level clinical reasoning alongside facilitating engagement in academic, professional discourse to explore and challenge the depth and breadth of students' knowledge (Hungerford et al., 2015; Joughin, 1998; Kleiven et al., 2016; Pearce and Lee, 2009; Shenwai and Patil, 2013; Sutherland et al., 2019).

Using the oral viva as an authentic assessment method in an online forum is under-researched and the benefits and limitations in the online environment are still evolving. Only three studies have explored the use of oral vivas in fully online courses (Akimov and Malin, 2020; Okada et al., 2019; Sotiriadou et al., 2020). These studies demonstrated that online oral vivas improved

communication skills and safeguarded against academic integrity breaches (Akimov and Malin, 2020; Okada et al., 2019; Sotiriadou et al., 2020). Also, students enjoyed engaging in this type of assessment as they perceived it provided an opportunity to showcase their knowledge and, while the assessment was reported to create some anxiety, students believed it was an appropriate assessment method (Akimov and Malin, 2020). While these studies speak to the value of oral online vivas, less attention has been paid to the way that these assessments are graded, particularly as a potential means to develop capabilities, such as self-reflection and evaluation.

Commonly, in assessment grading, students are the passive recipients of feedback with grades being bestowed on them by an 'expert judge' (Molloy and Denniston, 2019; Sadler, 2010). For example, (Delany and Molloy, 2009) reported that, even in clinical education, learner contribution in feedback conversations was less than five per cent with scarce opportunities for learners to express their own perspectives on performance. Academic or external judgment of student performance appears to permeate most assessment methods, including authentic assessment (McGaghie et al., 2020; Oermann, 2014). In nursing, it could be argued that the prevalence of summative assessment and traditional assessor judgement of performance stifles the development of students' critical thinking and self-evaluation skills (Siles-González and Solano-Ruiz, 2016). Indeed, underdeveloped methods of providing self-evaluation opportunities in higher education have resulted in studies that report self-evaluation by students to be inaccurate and ineffective (Baxter and Norman, 2011; Davis et al., 2006; Gadbury-Amyot et al., 2015; Jackson, 2014). Maintaining the status quo whereby experts pass judgement on health professional students, and continuing to reinforce student dependency on receiving feedback, creates disparity with the working world where graduates are expected to make evaluative judgements on their own work and identify knowledge deficits (Boud et al., 2018).

One potential method to promote student independence is self-assessment. Self-assessment involves students appraising their own work but generally has not included discussion on the quality of the students' ability to self-reflect (Tai et al., 2018). A richer method, known as

consensus marking, was created to build on self-assessment and requires that the student self-evaluate their performance with both the assessor and student engaging in a reflective conversation about competent performance. (Thompson et al., 2017).

Consensus marking

Consensus marking requires students to reflect and evaluate their performance against the outlined criteria. Before the assessor passes judgement on the student's capability, both parties engage in a critical reflective discussion where consensus is reached about the student's perception of their competency. Competency is a term used to encompass the qualities of expertise, aptitude, and proficiency. Consensus marking is believed to promote reflexive practice, to build self-reliant practitioners who can identify their learning needs while also giving students a voice during the grading process (Thompson et al., 2015).

To date, only one published study has evaluated consensus marking. The study explored perceptions about consensus marking from a cohort of undergraduate paramedicine students during face-to-face oral viva assessments (Thompson et al., 2017). Students (n=90) in this study perceived consensus marking to be fair, effective for learning, while also facilitating critical analysis of their own practice (Thompson et al., 2017). To date, the use of consensus marking has not been examined in other health professions including nursing, in an online medium, or a postgraduate cohort of students.

4.4 Methods

Aims

This study aimed to explore postgraduate nursing students' perceptions about their experience of online oral viva examinations and the use of consensus marking.

Design

This qualitative study used pre-existing data collected for quality assurance and improvement from a postgraduate emergency nursing unit of study at one university. At the end of the oral viva after the students had completed the consensus marking and had been allocated their final grade, all students were asked two open-ended questions:

1. What did you think about the oral viva as an assessment method and how does it relate to your learning goals?

2. What do you think about the consensus marking as a method of grading the oral viva?

Participants

Video recordings were collected as part of a routine university assessment for this cohort. As part of the examination process, the assessment, and the responses to the two open-ended questions were audio-recorded and stored in an online learning management system. Permission was sought from the students retrospectively to use the stored data so that the recordings were able to be analysed. All students were contacted with 13 of the 50 students (26%) enrolled in the unit of study providing consent (M:F 2:11).

4.5 Online viva and consensus marking approach

The online oral viva was a summative assessment item at the end of a capstone emergency nursing unit of study. The viva was worth 35 % of the final grade. Each student was randomly allocated one of three scenarios (Figure 4.1). The oral viva was delivered through an online video conferencing system (Blackboard Collaborate ©) and recorded for moderation purposes. The oral viva exam required students to demonstrate a deep understanding of pathophysiology, pharmacology, clinical and diagnostic reasoning as the patient condition in the

scenario deteriorated. The oral viva exam took approximately 45-minutes and consensus marking, took approximately 15 minutes after the viva exam.

Figure 4.1 Case based scenarios used for the online oral viva

Scenario 1

BURN INJURY

A 60-year-old woman was involved in a house fire. She woke to a smoke-filled room; she took 5 minutes to exit the burning building. The next-door neighbour used the garden hose to apply cold water to her as a first aid measure. This method of cooling continued until the ambulance arrived some 15 minutes later. She had significant burns to her body.

Scenario 2

TRAPPED AND TRAMPLED

A 44-year-old woman is rescued by paramedics following an incident on a remote farm. She was trapped against railings in a cattle crush, fell to the floor and was trampled by several cattle. She lost consciousness for approximately 2 minutes.

Scenario 3

MVA DRUNK DRIVING

A 24-year-old male driver was involved in a head on collision in his car with a large gum tree at 2am. He appeared to be intoxicated at the scene and the police were in attendance. He was trapped in the car, and it took 20 minutes to extract him from the vehicle. He cannot recall the events leading up to the accident and he was conscious when the ambulance crew attended.

The marking rubric (Figure 4.2) was split into two parts, each contributing 50% of the final grade. Part A of the rubric was a traditional tutor judgement of the student's overall performance against the described criteria. Part B involved the students engaging in self-evaluation and a critical feedback discussion with the assessor to calibrate their understanding of their level of competence and their achievement of the desired standards outlined in the criteria. Both parties engaged in a critical reflective conversation and bidirectional feedback about each of the identified criteria in part B. During this discussion, a student may identify errors or lack of knowledge and had an opportunity to rectify errors at this time. The student evaluated their performance against the criteria in part B before the assessor provided any judgement or grade to the student.

Figure 4.2 Oral Viva Consensus Marking Rubric

PART A TUTOR JUDGEMENT		
Grade		/5
5	Safe, competent, practice demonstrated	
4	Minor improvements needed	
3	Multiple areas for improvement	
2	Unsatisfactory performance – limited understanding	
1	Lack of knowledge demonstrated could lead to patient harm	
0	Critical errors that would result in patient harm	

PART B CONSENSUS MARKING		
PRIMARY SURVEY & EARLY INTERVENTION	Student	Teacher
	Not Competent	Not Competent
	Consensus on competent	/ 1
ABILITY TO INTERPRET DIAGNOSTICS	Student	Teacher
	Competent	Competent
	Consensus on competent	/ 1
CLINICAL JUDGEMENT & MANAGEMENT OF THE SCENARIO	Student	Teacher
	Competent	Competent
	Consensus on competent	/ 1
SECONDARY SURVEY & APPROPRIATE INTERVENTIONS	Student	Teacher
	Competent	Competent
	Consensus on competent	/ 1
POST RESUSCITATION CARE	Student	Teacher
	Competent	Competent
	Consensus on competent	/ 1
Consensus Score	**/5**	
TOTAL SCORE		**/10**

Adapted from Thompson et al 2016 “student-tutor consensus” marking rubric

4.6 Data collection

Consenting students' recordings were extracted and transcribed verbatim. A thematic analysis of the transcribed data was conducted to explore meaning from the student experience. Data analysis involved initial coding to identify patterns and concepts from the data. Focused coding then occurred to identify themes. Coding and identifying themes were completed using both a manual coding method and NVivo© computer software. To achieve rigor and validity during the analysis process, peer debriefing was conducted by the research team that included nursing and non-nursing professionals. In addition, the primary researcher maintained field notes and a reflective journal to highlight any personal biases or potential issues that might have influenced the data analysis. Regular reflexive discussions also occurred with the research team during the data collection and analysis phase to ensure the trustworthiness of the resulting patterns, concepts, and themes (Morse 2015).

Data analysis

Thematic analysis using a six-stage approach as described by Braun and Clark (2006) provided an iterative and flexible framework to facilitate comprehensive scrutiny of the data. A reflexive approach to analysing the data generated initial codes. As cohesive, meaningful patterns were identified these were inductively conceptualised into themes (Braun and Clarke, 2006). Rather than applying an a priori theory, the researchers used comparison as an iterative cyclical process to revise the codes, and by connecting relationships within and between the codes, themes were identified (Bowen, 2008; Morse et al., 2002). Dependability was achieved by having two members of the research team independently review the transcribed data to validate the codes and themes (Creswell, 2018). Please see appendix 4.4 for detail on mapping categories and initial codes to the final themes and an example of theme development.

Ethical considerations

Ethical approval was provided by the University Social and Behavioural Research Ethics Committee (SBREC) (approval no. 8554). Written informed consent was gained from all participants.

4.7 Results

4.7.1 Student perceptions of an online oral viva exam

The transcribed data, on the students' perceptions of the oral viva and its relationship to their learning goals, was initially categorised into 5 codes. 1) Looking for tutor judgement, 2) negative thoughts, 3) positive thoughts, 4) relates to the real world and 5) ways of learning. Three themes emerged from the codes:

Theme 1: Anxiety

Eight of the 13 participants (62%) expressed anxiety at the concept of engaging in an oral viva exam. This is demonstrated by the following quote:

"My initial thoughts on the oral viva when I found out it was going to be an oral viva was not looking forward to it. It is so in your face so on the spot… I started off, well a bit worried about it". (P15)

Theme 2: Relates to real work-life experiences

Six of the 13 participants (46%) expressed how the oral viva exam reflects what they do in the clinical setting. The following quotes highlight that their experiences were reflective of the clinical setting:

"It is a good way to sit there and talk to yourself and for you to ask questions occasionally we are used to that at work as well. The fact that the course that we are doing is emergency nursing and its all resuscitation based you should have a systematic approach to go through this is a good way to basically make sure that we have that understanding". (P 39)

"I think it is good it puts everything together you can practice putting it into the clinical space". (P 5)

"It helps you hone those skills that we have learnt throughout this course…and apply them in that situation…this is more truer to how it will be ultimately, thinking on your feet". (P 42)

Theme 3: Preferred assessment method

Eleven of the 13 participants (85%) expressed a preference for the oral viva as an assessment method rather than a written assignment.

"I love simulations, I love being able to defend my knowledge… I could focus on learning when I was studying instead of referencing. Written assignments are getting a little bit old so this is really refreshing as a different way of assessment". (P 41)

"Thinking out loud…allowed me…to be able to get all my points across…the oral viva allows consolidation of knowledge". (P 43)

"I have been working in ED for a long time and I feel like I do know my stuff and that I do better in this kind of situation where I can talk through stuff as opposed to academic expression". (P 46)

4.7.2 Student perceptions of consensus marking as a grading method

The transcribed data on students' perception about consensus marking was initially categorised into eight codes, 1) a positive experience, 2) fair method. 3) having a voice. 4) identifying weaknesses, 5) instant feedback, 6) looking for tutor judgement, 7) perceived inability to self-evaluate, 8) ability to self-evaluate and reflect on practice. Three themes emerged from the codes:

Theme 1: Enabling reflection and self-evaluation

Ten of the 13 participants (77%) mentioned that they liked how they were given the opportunity to reflect on what they had done, evaluate their performance and identify errors and correct them without penalty.

"It forces a reflection on how you have done. I have not really done a reflection like that with any other assignment, quite in depth". (P 41)

"I like the opportunity to reflect on what we have done…. It is not always something we do. When we are reflecting on how we personally feel we have gone in a situation that is where we do identify our weaknesses". (P 15)

Theme 2: Beneficial critical reflective conversations

Eight of the 13 participants (62%) expressed that engaging in conversation with the assessor and reflecting on performance created an opportunity to gain valuable feedback and assisted them to identify where they demonstrated knowledge and skill and where they could improve.

"My weaknesses were probably a little better established to me and having someone agree with me when I say those weaknesses is actually really refreshing because often they get downplayed or … not acknowledged when you express them to a colleague". (P 41)

"I like the instant feedback…your post learning you sort of know straight away where some of your weaknesses are… where some of your strengths are just reinforces the things that we already do feel confident in. It is good to hear that feedback. We have more guidance on where we need to put more focus and education". (P 15)

Theme 3: Positive dynamic

Seven of the 13 participants (54%) expressed a feeling that the critical reflective conversation with the assessor was on equal terms. They could discuss how they felt they performed and could work out where their knowledge deficits were through collegial dialogue with the assessor.

"It is good because I can hear where you are coming from and you can hear where I am coming from so… it gives a chance to sort of hash out, sort of say, ok yeah I see that…..It gives you a chance to voice your opinion" (P 2)

"Sometimes you get a result that you think, well I did that properly, but someone else has the opinion that no they don't, so that this way you and I can actually talk about it, so I can tell you what I think I did well and you can tell me what you think I did well or if I needed extra learning in something you could tell me". (P 39)

4.8 Discussion

This qualitative study explored postgraduate emergency nursing students' perceptions of an online oral viva assessment, and the use of consensus marking. Students perceived that while the online viva created some anxiety, the assessment was congruent with learning in the workplace. Further, students perceived that consensus marking enabled self-evaluation and reflection, allowing beneficial critical reflective discussions while creating a positive dynamic between the student and assessor. Thus, this form of self-assessment, in conjunction with critical feedback from the assessor, appeared to enable the development of evaluative judgment, a necessary goal of higher education, that enables students to improve their work and to meet their future learning needs (Tai et al 2017).

Students enjoyed the dynamic and challenging nature of the case-based oral viva and preferred this assessment method to written assessment despite the anxiety created. This finding is consistent with the literature with student reported anxiety being strongly associated with oral viva assessments (Carter, 2012; Furnham et al., 2008; Huxham et al., 2012; Kleiven et al., 2016; Pearce and Lee, 2009). The stress response to oral examinations has the potential to interfere with working memory and ability to recall information (Ringeisen et al., 2019). However, anxiety levels are driven in part by the unknown. For example, students entered into the assessment process with uncertainty around the nature of the questions and despite preparing based on the key assessment information provided, there may have been doubts around their own preparedness, fear of failure and ability to perform (Hungerford et al., 2015; Joseph et al., 2019). While anxiety may affect performance, studies also suggest that learners understand that being taken out of their comfort zone is valuable for learning, even when this is perceived as unpleasant at the time (Leahy et al., 2020). Indeed, it could be argued that in postgraduate emergency department nursing, an ability to work under pressure, and manage anxiety, is critical to responsive decision making and providing appropriate interventions when patient outcomes are time-critical (Groombridge et al., 2019).

Creating authentic assessment is dependent upon the assessment being relevant to students' workplace experiences and that students understand the value of learning the curricular content and assessable learning outcomes (Benner, 2012; Bosco and Ferns, 2014; Villarroel et al., 2018). The online oral viva exam attempted to replicate trauma scenarios common to emergency departments that students are expected to manage. The online oral viva assessment method provided a forum for students to focus their learning and showcase their knowledge. In this study, students enjoyed defending their knowledge and experiences, while engaging in professional discourse that allowed them to focus on learning clinically relevant skills rather than focusing on academic writing. These findings support the concept that authentic assessment should be realistic, challenge higher order thinking and facilitate opportunities for students to judge their own performance (Raymond et al., 2013; Tai et al., 2018; Villarroel et al., 2018)

The oral viva exam, whilst providing realism and cognitive challenge, generally does not provide students with the opportunity to judge their own performance when combined with traditional assessor judgement. However, students perceived that consensus marking enabled reflection and self-evaluation with beneficial critical reflective conversations with their assessor. The two-way feedback dialogue enhanced students' learning experiences as they were actively engaged in the reflective feedback discussion. This finding is consistent with literature describing that bidirectional feedback dialogue creates an environment where students engage in the feedback process that supports them in calibrating their performance against the desired criteria (Boud and Molloy, 2013; Gamlem and Smith, 2013; Hattie and Timperley, 2007; Sadler, 2010; Tan et al., 2019; Yang and Carless, 2013). Moreover, the critical reflective conversations with the assessor may have enabled reflection beyond-action by facilitating students to make sense of, and learn from, the experience (Edwards, 2017). In this study, nursing students were able to identify where they lacked knowledge and where they could improve through a collegial discussion with the assessor.

The nursing students noted that they had input into the feedback dialogue and engaged in a democratic collegial discussion that supported them to identify their future learning needs, suggesting a positive dynamic between student and assessor. This dynamic could be argued to result in a more level playing field whereby the students were free to debate, request more feedback and rationalise any discrepancy in their perception on performance. Such an opportunity is a move away from the traditional authoritarian role of assessor grading and unilateral feedback that forces students to be passive recipients of judgement on their performance and maybe more reflective of learning in the workplace.

This is the first study to explore student perceptions of an online viva with consensus marking in postgraduate nursing education with several methodological strengths. Firstly, the participant recruitment and qualitative analyses were completed retrospectively on pre-existing data eliminating possible bias in student responses to the open-ended questions. Secondly, the qualitative analyses were completed by two members of the research team, with cross-checking of themes and results with the rest of the team, ensuring rigour in the process and findings. Finally, the same assessor was used for all online viva and consensus marking assessments, allowing for consistency between participants and methods of data collection.

4.8.1 Limitations

The study also has limitations. First, the sample size was small, and the questions asked were simple and open-ended. However, the codes that emerged generated an understanding of the students' perceptions and the themes illuminated clear meaning from the data collected. Second, the findings provided a perspective from one cohort of postgraduate students at one tertiary institution and may not be generalisable to other health professional students or institutions. Finally, this study sought student perspectives that may contain unqualified assumptions about assessment and grading methods.

4.8.2 Implications

The findings suggest that postgraduate nursing students support the online oral viva as an authentic assessment method despite the anxiety created. The students enjoyed the critical reflective conversation and instant feedback that consensus marking provided, and that their thoughts and opinions about their performance were discussed without fear of penalty. Based on these findings, educators might consider relinquishing the traditional assessor judgement in favour of a more democratic approach to summative grading. However, more empirical evidence is needed to compare consensus marking to traditional tutor judgement. Further work is needed to explore if there are differences created by the grading method in the relationship between student and assessor and if that relationship impacts anxiety levels when performing an oral viva. While this study focussed on the emerging educational philosophy of evaluative judgement, further research could explore whether different learning styles impact students' perception' of consensus marking, their level of satisfaction with self-evaluation, and if any benefits are carried over into the workplace on graduation. In addition, further studies could explore other assessors/lecturers' perceptions of consensus marking and its use in other disciplines would add to the discourse of consensus marking as a grading method.

4.9 Conclusion

A desired outcome of nursing postgraduate assessment is to provide students with the skills and knowledge required for their future professional career. A skill set that is highly regarded is the ability to self-regulate learning and critically reflect on clinical practice. A case-based online oral viva provided an authentic assessment method that created a synchronous interaction with online students simulating realistic emergency presentations. Authentic assessment benefits from a grading method that supports the concept of developing evaluative judgement through self-assessment. Consensus marking nurtured students' ability to reflect and engage in critical dialogue with the assessor and appeared to support the development of self-reflection and evaluation. Using consensus marking to grade online oral vivas promotes engagement in professional discourse,

where students reflect on performance, self-evaluate, and identify their strengths and weaknesses to inform future learning needs. This study suggests that the online oral viva using consensus marking is an assessment and grading method that provides an opportunity for students to develop their evaluative judgement.

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Chapter Five

Consensus marking as a grading method for the development of evaluative judgement: comparing assessor and students

As published in Nurse Education in Practice

Henderson, B., Chipchase, L., Aitken, R., & Lewis, L. K. (2022). Consensus marking as a grading method for the development of evaluative judgement: Comparing assessor and students. Nurse Education in Practice, 63, 103386–103386. https://doi.org/10.1016/j.nepr.2022.103386

The previous chapter explored consensus marking, a new grading method that embeds the concept of developing students' evaluative judgement. This chapter presents a peer reviewed manuscript titled: *Consensus marking as a grading method for the development of evaluative judgement: comparing assessor and students*' a mixed methods study published in Nurse Education in Practice *(Scimago Q1 – top 10%, 10/172 Nursing miscellaneous, Impact Factor 3.2, H-index 62)*.

This study differed from the previous study, as it is prospective, and the focus was on gathering students' perspective about the difference between traditional grading methods and consensus marking, as well as exploring whether using consensus marking influenced student anxiety and satisfaction levels.

The previous study presented in Chapter Four highlighted that anxiety was a feature of oral viva exams, a finding consistent with other studies on the use of oral vivas (Akimov and Malin 2020). Therefore, testing consensus marking against traditional assessor grading methods in this subsequent study included an anxiety score attempting to explore if self-evaluating and grading using consensus marking had any potential to reduce students' anxiety and increase satisfaction in oral viva exams.

An authorship declaration is included in Appendix 5.1. The publication is reproduced with the journal permission refer to Appendix 5.2. Please refer to Appendix 5.3 for the PDF version of the article, as published in *Nurse Education in Practice.*

5.1 Abstract

Background: Reflection, self-evaluation and feedback conversations have the potential to develop nursing students' evaluative judgement. Consensus marking is a novel method of grading students' performance that supports students to reflect, self-evaluate and grade their own work. Active engagement in a feedback dialogue supports students to calibrate their self-evaluation to the required standard in a grade negotiation. Through this approach, students are supported to develop evaluative judgement and lifelong learning skills.

Objective: This study explored postgraduate nursing students' perceptions, anxiety, and satisfaction of an innovative and novel grading method for online vivas, consensus marking, compared with traditional assessor judgement.

Design: A convergent mixed-methods parallel research design was used.

Methods: Students enrolled in a postgraduate emergency nursing unit of study completed two online viva assessments. One viva was graded using traditional assessor judgement, and the other used consensus marking, involving a two-way feedback dialogue, where students had an opportunity to actively engage in grading their own work with the assessor. Student perceptions of each grading method were explored through semi-structured interviews. Interview data were analysed thematically using a six-stage approach. Student anxiety and satisfaction were measured pre- and post each viva using valid and reliable questionnaires. Non-parametric analyses explored differences in anxiety and satisfaction between the two grading methods. Alpha was set at 0.05.

Results: Forty-six participants had complete data for anxiety and satisfaction across both test occasions (82%) and were included in the analysis. Of these, 13 students participated in follow up interviews. Students perceived that the ability to self-evaluate performance and discuss their grade with the assessor using consensus marking was less hierarchical and similar to a collegial debrief. Student anxiety was significantly lower prior to consensus marking compared with the assessor

judged viva ($p < 0.001$). Students were significantly more satisfied with consensus marking compared with assessor judgement ($p < 0.01$).

Conclusions: Consensus marking created an opportunity for students to identify knowledge deficits through reflection and self-evaluation of their own performance prior to external judgement. Students were more satisfied and less anxious with the consensus marking grading method compared with traditional assessor judgement. These findings have implications for the development and application of new grading methods in nursing education to facilitate the development of evaluative judgement.

5.2 Background

Evaluative judgement has been defined as *"the capability to make decisions about the quality of work of self and others*" (Tai et al., 2018, p.5). This capability is vital for nurses who must be able to judge the safety and quality of their own and others' clinical practice (Cathro, 2016; Vaismoradi, et al., 2020). Making decisions about the quality of clinical practice, using reflection and self-evaluation, is important for emergency nurses who function in a demanding, intense and often unpredictable clinical setting where a close relationship between nurse'' clinical competency and quality of care has been identified (Aghaie et al., 2021; Weigl & Schneider, 2017). Thus, the challenge for higher education is to equip postgraduate nursing students with skills that supports their learning beyond the completion of the course so they have the ability to reflect and self-evaluate their own performance (Boud & Falchickov, 2006; Boud & Soler, 2016).

Students on their journey to graduation will engage in teaching and learning activities including assessment, a fundamental component of teaching and learning (Watling & Ginsburg, 2019). Using assessment *as learning* occurs when students are responsible for monitoring their own learning and act as their own assessors (Hume & Coll, 2009; Torrance, 2007). Assessment as learning is achieved by scaffolding activities of self-evaluation, self-assessment, peer-review and reflection throughout a curriculum (Ajjawi & Boud, 2017; Boud & Falchickov, 2006). Therefore,

designing assessments as learning has potential to develop students' evaluative judgement (Boud et al., 2018; Boud & Soler, 2016; Yan, et al., 2020).

Assessment can be a source of anxiety for students (Roos et al., 2020). Oral vivas as an assessment method have been associated with high levels of anxiety particularly when students perceive a lack of consistency between their performance and grade (Carter, 2012; Furnham, et al., 2008; Huxham, Campbell, & Westwood, 2012; Kleiven, Tegani, & Sullivan, 2016). Conversely, there is evidence that oral vivas motivate students to learn, and that students perceive them as authentic assessment compared to written assessments (Ganji, 2017; Orrock, et al., 2014; Pearce & Lee, 2009). While it is accepted that an appropriate level of anxiety motivates students to engage in learning and perform optimally (Hooda & Saini, 2017; Rasouli, Alipour, & Ebrahim, 2018), high levels of anxiety are thought to impair academic performance and the student experience (Roos et al., 2020; Thomas, Cassady, & Heller, 2017).

Academic performance is generally assessed by an expert who unilaterally provides the judgement and delivers the grade and feedback to the student about the quality of their work (Brooks, 2012). However, if the delivery of grades and feedback engages students in a conversation, students may self-regulate their learning as they become active participants in a two-way feedback dialogue (Ajjawi & Boud, 2017; Boud & Soler, 2016; Ilangakoon, et al., 2022; Merry, et al., 2013; Tai et al., 2018) A new approach to develop this feedback dialogue is through consensus marking (Henderson, et al., 2021; Thompson et al., 2017). The unique features of consensus marking provides students with an opportunity to actively engage in grading their own work and calibrate to the standard through a feedback dialogue with the assessor. Using consensus marking, the student reflects, discusses, and evaluates their performance before the assessor passes judgement. Grading then occurs by calibrating the student's self-evaluation to the required standard through a feedback conversation and grade negotiation (Henderson et al., 2021). The relationship between reflection, self-assessment and feedback methods has not been considered explicitly in nursing education (Ilangakoon et al., 2022). Thus, consensus marking

provides an explicit assessment approach that may develop students' evaluative judgement by synergising reflection, self-evaluation, and feedback dialogue.

Two previous studies have evaluated consensus marking in health professional education. Undergraduate paramedicine students' (n=90) perceptions of consensus marking in a face-to-face clinical viva were explored by Thompson et al (2017) with students perceiving that consensus marking was fair and effective for learning while facilitating evaluation of their practice (Thompson et al., 2017). Subsequently, a retrospective analysis of postgraduate emergency nursing students' (n= 13) perceptions of consensus marking in an online oral viva was investigated (Henderson et al., 2021). In that study, consensus marking was perceived to enable reflection and self-evaluation while creating an opportunity to gain feedback through a collegial reflective conversation (Henderson et al., 2021). However, consensus marking has yet to be compared with the familiar marking methods where the assessor judges the students' performance.

Given the paucity of research on consensus marking as a grading method and the importance of actively engaging students in self-evaluation and feedback dialogue to develop evaluative judgement, this study aimed to explore postgraduate emergency nursing students' perceptions of oral vivas using consensus marking compared to assessor judgment in an oral viva exam. First, students' perception of their learning experience and relationship with the assessor were explored. Second, the study investigated differences in student anxiety and satisfaction between each of the grading methods.

5.3 Methods

5.3.1 Design

A convergent mixed-methods parallel research design with concurrent, yet separate, collection of data using questionnaires and semi-structured interviews was conducted. The data collection methods were equally weighted with analysis of the two components being independent, but interpretation of the results combined (Creswell & Plano Clark, 2011). Using both quantitative and qualitative data, the researchers sought to obtain different but complementary data of the students' experience to better understand the student perspective. To build a rich description of the phenomenon under investigation, a descriptive generic qualitative approach was used (Hoon Lim 2011; Merriam 2002; 2009). The consolidated criteria for reporting qualitative research (COREQ) were used to guide the qualitative research component (Tong, Sainsbury, & Craig, 2007).

5.3.2 Ethics

Ethical approval (No. 2106) was gained from the Human Research Ethics Committee of Flinders University where the research was conducted. All participants were provided with an information sheet outlining the study and then provided informed consent.

5.3.3 Participants and setting

A convenient sample of 56 Registered nurses (M:F; 6:50) enrolled in a university postgraduate capstone emergency nursing unit of study were invited to participate. Assessment for this unit of study included two oral vivas conducted online using Blackboard Collaborate©. The first oral viva assessment occurred in week six of a 14-week semester where the assessor judgement of performance method was used. The second oral viva assessment using consensus marking occurred in week 13 of the same semester.

5.3.4 Oral viva grading methods

Assessor judgement of performance

The assessor, who was the expert judge of the student's performance, was the academic responsible for delivering the teaching. The assessor decided on the grade guided by a marking rubric, and subsequently delivered verbal and written feedback. Ten minutes was allocated to complete the marking rubric, give verbal feedback, and provide a written summary to each student. It was assumed that the student would interpret and apply the feedback given by the assessor to improve future performance.

Consensus marking

Consensus marking engaged students in reflection and evaluation of their performance before any judgement of performance was provided by the assessor (Henderson et al., 2021). Students reflected on whether their performance met the required standard, guided by a marking rubric. Students then engaged in a feedback conversation with the assessor and calibrated their level of knowledge to the expected standard. Consensus was then reached between the assessor and the student on the grade achieved (Henderson et al., 2021; Thompson et al., 2017). On average, consensus marking took 15 minutes per student to complete.

All oral vivas were conducted by one assessor who graded and delivered feedback. Moderation occurred before the oral vivas by a content expert lecturer who was not connected to the research team. The instructions, marking guides, and rubrics were assessed for clarity, transparency, and fairness. Further, a lecturer who was independent to the research team reviewed eight randomly selected video recorded oral vivas to assess the feedback and grades for equity and fairness in both viva exams.

5.4 Data collection

Students Perceptions

All students were invited to participate in a semi-structured on-line, in-depth interview by email. The interviews provided an opportunity to gain a deep and rich understanding of student perceptions, expectations and experience of consensus marking compared to an assessor grading of oral viva assessment. The interview questions are outlined in Table 5.1.

Table 5.1 Interview guide

Questions
a. I would like to start by asking if you can tell me generally about your experience of the oral viva exams? Prompt question: a. *What were you expecting before you participated in the first Viva?* b. *How did this make you feel?*
b. And the second viva, were you expecting the same or different? Prompt question: a. *How did this make you feel?*
c. Can you tell me about the purpose of the oral viva? Prompt question: a. *How do you think the Viva is supposed to contribute to your learning?* b. *Do you think that this learning outcome was achieved?* c. *Was there any difference between the learning achieved in each of the vivas?* d. *Now that you look back on the experience, what do you think that you learnt – regardless of whether this might have been the intention or not?* e. *Was there any difference between the learning achieved in each of the vivas?*

d. Can you tell me about the grade that you achieved?

    Prompt question:
    a. *Was your grade what you expected?*
    b. *Do you think this was a true reflection of your experience?*
    c. *Was this the same for both vivas?*

e. What do you think was the role of the tutor in the oral vivas?

    Prompt question:
    a. *was this the same for both vivas?*
    b. *How is the tutor role different to your role in the viva?*
    c. *Was this the same for both vivas?*

f. What might you tell other students about your experience?

    Prompt question:
    a. *Was this the same for both vivas?*

5.4.1 Anxiety

Anxiety was measured prior to each oral viva exam, with an Exam Anxiety Scale (EAS), completed online using QualtricsXM©. The EAS is a 12-item validated shortened anxiety test (Table 5.2), developed by Bedewy & Gabriel, (2013) and was based on the 20-item Text Anxiety Inventory by Spielberger, (2010). The EAS used Likert scales with anchors at 0 = strongly disagree, 5 = neutral and 10 = strongly agree. The items identify three factors: 1) excessive performance anxiety that means excessive preoccupation with fear of failure and inability to relax. 2) negative academic self-concept and excessive autonomic response that refers to poor self-confidence in academic ability and fear of failure, and 3) familiar test anxiety that refers to commonly experienced exam anxiety such as butterflies in the stomach or restless sleep the night before the exam.

Table 5.2 Exam Anxiety Scale (EAS) (Bowdey & Gabriel 2013)

ITEMS (N=12)	**FACTORS**		
	F1	F2	F3
My heart beats fast (races) during exams	x		
I expect my anxiety will interfere with my performance in the oral viva exam	x		
I am afraid of failing the oral viva exam	x		
Oral viva exams make me unable to relax	x		x
I tend to have breathing difficulty on exam days		x	
I develop diarrhea around the time of exams		x	
I am preoccupied with failure just before the oral viva exam		x	
Even when I am well prepared for the oral viva exam, i feel anxious about it		x	
I do not have confidence in myself to pass		x	
Oral viva exams make me unable to relax			x
Oral viva exams make me feel shaky			x
I experience an upset stomach on exam day			x
My sleep is disturbed before exam days			x
Factor 1: (F1) excessive performance anxiety *Factor 2: (F2) negative academic self-concept and excessive autonomic response* *Factor 3: (F3) familiar test anxiety*			

5.4.2 Satisfaction

Student satisfaction was measured following each oral viva using the Satisfaction in Oral Viva Assessment Scale (SOVAS) completed online using QualtricsXM©. The SOVAS is a five-item questionnaire developed and validated by Salamonson et al., (2016) (Table 5.3). Scores from the five items are averaged to identify the level of satisfaction. The SOVAS uses Likert scales with anchors at 0 = strongly disagree, 5 = neutral and 10 = strongly agree. Two demographic questions were included to ascertain primary language spoken and years' experience working as a Registered nurse.

Table 5.3 Satisfaction in Oral Viva Assessment Scale (SOVAS)

The oral viva assessment in the emergency nursing course has helped me learn
I was able to learn from the feedback I received from the oral viva assessment
There were clear guidelines for the oral viva assessment in this topic
During the oral viva I had enough time to answer the questions
Compared to a written assignment I think the oral viva assessment is
What language do you speak at home
How long have you worked as a Registered nurse

(Salamonson et al 2016) *Scaled responses were required for the stem questions shown in the table*

5.5 Procedure

The interviews were conducted online after participants had completed both vivas and had received their final grades for the unit of study. Two members of the research team who were not part of the teaching team and did not have a pre-existing relationship with the students conducted the interviews (LC, RA). The primary researcher (BH) was blinded to who was participating in the research project. The audio recordings of the interviews were transcribed using Descript© and manually checked for accuracy. No field notes were made, and the interviews lasted between 20 to 30 minutes.

Participant anxiety was measured on two test occasions with the EAS administered three days before each of the oral viva assessments. The questionnaire completed before the first oral viva exam was identified as EAS1 and the EAS questionnaire completed before the second oral viva exam was identified as EAS2. Student satisfaction with the SOVAS was measured immediately following each oral viva assessment on both test occasions. The SOVAS questionnaire completed after the first oral viva exam was identified as SOVAS1 and the questionnaire completed after the second oral viva exam was identified as SOVAS2.

5.6 Data management and analysis

5.6.1 Student Perceptions

Using NVIVO© software and a manual coding method, the transcribed interviews were coded, and themes identified. A reflexive thematic analysis approach was used (Braun & Clarke, 2019). All members of the research team conducted the thematic analysis using a six-stage approach (Braun & Clarke, 2006). Initial coding of each interview identified fragments of data, phrases, and key words that related to themes already identified in the literature, extended the findings of previous studies, related specifically to the experience(s) of the students, represented students' perceptions of the exam process and/or components of evaluative judgment. The data was reviewed each time a new theme emerged, and the theme was either confirmed by further examples or modified to reflect a more nuanced understanding of the responses.

The researchers engaged in an iterative cyclical process to revise the codes to identify connecting relationships within and between the codes. Meaningful patterns were identified which were inductively conceptualised into themes (Braun & Clarke, 2006; Morse, 2002). Dependability was achieved by having two of the researchers (BH and LKL) review transcribed data to validate the codes and themes (Creswell, 2018) and confirm data saturation when no new themes emerged. The data analysis was conducted after participants had completed their studies with participants no longer having access to their university emails or online learning platform. This precluded the opportunity to engage with member checking. Peer briefing was conducted to ensure trustworthiness and credibility of the thematic analysis process (Lincoln & Guba, 1985). The research team engaged in fortnightly reflexive discussions during the data analysis phase, and the primary researcher maintained a reflective journal to identify any personal biases or potential issues that might influence the data analysis.

5.6.2 Anxiety and satisfaction

Using IBM SPSS Statistics© version 25, data from the SOVAS and EAS questionnaires were analysed using non-parametric tests. Questionnaires were re-identified so that they could be paired across the two test occasions for each participant. Questionnaires that were not fully completed or could not be paired, were removed. Thus, participants who completed all questions for both test occasions for EAS and SOVAS were included in the analysis.

A Shapiro-Wilk test was conducted to determine whether the data sets produced a normal distribution (González-Estrada & Cosmes, 2019). The results of the Shapiro-Wilk test were significant for factor 2 EAS2 $W = 0.92$, $p < 0.05$, factor 3 EAS1 $W = 0.92$, $p < 0.05$, and factor 3 EAS2 $W = 92$, $p = < 0.05$. These results suggested that for the pre-test factor 3 in EAS1 and factors 2 and 3 in EAS2 were unlikely to have been produced by a normal distribution; therefore, normality could not be assumed.

Likewise, the post-test SOVAS2 results of the Shapiro-Wilk test were significant $W = 0.92$, $p < 0.05$ suggesting that a normal distribution could not be assumed. Attempts to transform the data sets using log, square root and reflection of the negatively skewed data were unsuccessful. The remaining data sets were normally distributed, however, for consistency, the Wilcoxon Signed Ranks Test was used to test significance for all paired data.

5.7 Results

5.7.1 Participant characteristics

All 56 students enrolled in the unit of study participated in the oral viva examinations. After removing incomplete questionnaires, 46 participants had completed both test occasions for the EAS and the SOVAS (82% of the cohort). Of these, 13 participants consented to be interviewed (23%). Of the 46 participants, 41 spoke English as their primary language. The average (SD) as a Registered nurse was 8.1 (6.2) years.

5.7.2 Perceptions

An example of excerpt phrases relevant to the initial coding from one participant is provided in Table 5.4

Table 5.4 Initial coding

Initial codes	**Interview excerpt – Participant 4**
Acknowledging the anxiety or stress.	*I'm someone who struggles really bad with anxiety, especially with known assessments. I talk myself out of them quite a lot, so I struggled really badly with anxiety.*
Expressing feelings of collegiality, able to ask questions.	*I did like the second style better because we were able to then have an opportunity to say like, Oh, I felt like I did really well there. What did you think? And they'd say yes, no, it kind of re confirms like where you are confident.* *And it also gets you to kind of address more likely deficits and ask questions that maybe you wouldn't get a chance to ask. Maybe the first style didn't give you that opportunity. Whereas the second style did.*
Valuing the opportunity for refection and going back over performance. Valuing feedback.	*I found the first oral Viva, very straight down, the line like it started and finished and ran very smoothly. The second one, I think I appreciate it a lot better because of the end, going back through it, being able to have an opportunity to go back over stuff and clarify things and get extra education and obviously bits that I did lapse and that we identified with deficits.*
Identifying that the assessment method was authentic to clinical practice.	*I see it as the same thing that we used to do in uni, like the clinical year you kind of, you go in, you have your fake patient there, and you can actually perform your clinical skills and go through a case scenario.* *That's more realistic and really tests you. You don't have the answers in front of you. You don't have all this information, they're giving you the answers.*
Have to learn and forced to learn.	*Like you really actually need to know what you're doing and know what you're on about to be able to run through a scenario like that. So I see it as more of like an online version of a practical assessment.*

The following six themes were identified from the 13 transcribed interviews with most participants' experiences aligning with multiple themes:

1. Accountable for learning
2. Authentic assessment and grading method that translates to clinical practice
3. Feedback, dialogue, and immediacy
4. Reflect and self-evaluate
5. Test anxiety
6. Voice and shifting power dynamics

Theme 1: Accountable for learning.

Ten of the 13 participants (77%) expressed that the oral viva assessment compelled them to learn and made them feel accountable for their learning. For example:

" I kind of more appreciated because I'm reading it and I'm reading it and I need to really read it and understand it. So then I can say it when I'm getting, like examined." (P12).

This accountability for learning was highlighted by participants' desire to showcase their knowledge in an assessment method that could potentially highlight any knowledge deficits.

"…for the viva I had to actually know what I was talking about and had to prove that I knew what I was talking about." (P1).

"That's more realistic and really tests you. You don't have the answers in front of you. You don't have all this information… Like you really actually need to know what you're doing and know what you're on about to be able to run through a scenario like that." (P4).

Theme 2: Authentic assessment and grading method that translates to clinical practice

Eight of the 13 participants (62%) expressed that the oral viva with consensus marking reflected the reality of their work life. One participant described consensus marking as:

"… a lot better form of assessment, particularly in a clinical subject, they made you consider on the spot just like you would in the emergency department. And for me that just related a lot more to the normal practice that we'd go about in the clinical setting." (P15).

And that consensus marking felt like a debrief after a clinical event and the realistic scenarios related to their everyday workplace experiences as the following participant notes:

"…definitely felt more like you know, debriefing after work, this code has just happened, and this is our debrief, that's probably more what it felt like then an exam … I do this every day. Like, what am I stressing about this is work." (P10).

Theme 3: Feedback, dialogue, and immediacy

Eleven of the 13 participants (85%) expressed that consensus marking gave them immediate and detailed feedback. One participant said:

"It was just good to provide that feedback, but also good to provide the feedback then and there straight away, there was no time delay" (P9)

The immediacy and detailed feedback dialogue assisted students understanding of where they needed to improve and where they did well as demonstrated by these remarks:

"And actually, understand the feedback you've received rather than going, this is what they've written, how the, how do I fix that?" (P15).

"I thought was better than the first [viva], I felt that the feedback was a bit more direct. I just felt like we got much better feedback for each single part, rather than the first traditional sort of marking that was just sort of a generalized feedback…I felt like the feedback was probably the best, the most noticeable difference." (P1).

Theme 4: Reflect and self-evaluation

Eight of the 13 participants (62%) appreciated the opportunity to reflect on their performance and self-evaluate including:

"I really liked the second, consensus way of marking because we were able to reflect back on what I missed or what I could have done better, what I did well". (P5)

Participants expressed that the opportunity to reflect and evaluate their performance assisted them in self-identifying future learning needs as demonstrated by this student's feedback:

"I found this was definitely a good way to learn because it helped you to be more self-reflective and identify your own sort of areas of improvement rather than just relying on our mentor and educator to do that for you.

There were more just aspects I thought I could have improved on for the future. Whereas if I did that in an exam, I'd probably remember the information and data dump it straight away. Whereas now I'm actually actively seeking out x-rays to look at and try and review a doctors' and get better at that." (P15)

Theme 5: Test anxiety

Twelve of the 13 participants (92%) expressed that an oral viva caused anxiety. The causes were varied, some participants were anxious because there was a compulsion to learn and prepare for the exam. For others, it was fear of the unknown, not knowing what questions would be asked. For example:

"Well, I think the vivas in themself are both very daunting, no matter. What type of grading scale". (P6)

One participant found the concept of consensus marking increased anxiety.

"I think, particularly on the second one, [consensus marking] because I knew somewhere, I'm marking myself." (P14).

Conversely some participants found that because they knew they could grade themselves and engage in a feedback conversation this reduced their level of stress.

"I struggled really badly with anxiety, so I think I liked the second process [consensus marking] better than the first one… and that was only just because of that communication pathway at the end." (P4).

Stress and anxiety for one participant was a motivator to learn, whereas two participants had anxiety levels that produced somatic effects that negatively impacted on their ability to perform.

"the first one I was quite anxious about, and to be honest, I was quite unwell on the day I had to pause the thing so I could vomit but the second one, I really, I knew the expectations from the first time and I wasn't nervous." (P11).

Participants expressed that their stress and anxiety levels were reduced in the second oral viva (consensus marking) simply because this was the second time that they had engaged in an oral viva exam. They had more of an idea about what to expect, therefore, their fear of the unknown was reduced.

“I don't think I was as stressed for the second one because I think I had a little bit of an idea of how it was going to go. So I was definitely more stressed about the first one, the second one wasn't as bad”. (P1)

“definitely felt a lot more comfortable with the second one, because we've done one. It wasn't a fear of the unknown”, (P9)

Theme 6: Voice and shifting power dynamics

Nine of the 13 participants (69%) used words such as justify, discuss, explain, talk, rationalise, colleague, circle back, align, confidence, agreement when responding to the question about consensus marking as a grading method. One respondent commented:

“I think just because when we talked about them together, we actually went through the subject sort of headings one by one. And because we had to obviously come to an agreement on a grade, I felt like we would both be able to talk and sort of justify the grade. I liked the fact that like I had the time to justify and explain things further if I needed to.” (P1).

The ability to have a voice was important to students. In some cases, there was a perception that it reduced the stress of the exam, while others felt it was less like an exam and more like a collegial discussion, including:

“… you feel less like sort of a hierarchy, like tutor student. It was more like we're working together and like we were going to work out what I knew without, being graded straight away.” (P6).

5.7.3 Questionnaires

Anxiety Questionnaire

Excessive performance anxiety, negative academic self-concept and excessive autonomic response, and familiar test anxiety were significantly lower ($p < 0.001$) when students engaged with consensus marking compared with tutor judgement marking (Table 5.5).

Satisfaction Questionnaire

Student satisfaction was significantly higher with consensus marking compared to tutor judgement marking ($p < 0.01$) (Table 5.5).

Table 5.5 Anxiety and satisfaction outcomes over the two test occasions (assessor judgement and consensus marking).

Outcomes	**Assessor judgement median (IQR)**	**Consensus marking median (IQR)**	**CI**	**n**	***p***
Factor 1 -Excessive performance anxiety	7.75 (2.50)	6.25 (4.13)	-2.25 - -0.62	46	<0.001
Factor 2 -Negative academic self-concept & excessive autonomic response	5.80 (3.10)	3.70 (2.65)	-2.40 - -1.00	46	<0.001
Factor 3 - Familiar test anxiety	7.12 (3.31)	5.12 (6.56)	-2.25 - -3.37	46	<0.001
Satisfaction	40.00 (11.00)	45.50 (9.00)	0.61 - 0.12	46	<0.01

IQR Interquartile range; CI Confidence Interval

5.8 Discussion

This is the first prospective study to compare consensus marking to an assessor judgement of an oral viva in the tertiary setting. Oral vivas using consensus marking were perceived by students to enhance their accountability for learning, be an authentic method of grading, facilitate reflection and self-evaluation, and provide opportunity to engage in a feedback dialogue. Importantly, consensus marking was perceived to shift the power dynamics between student and assessor. The quantitative questionnaire results supported these findings as students were more satisfied and less anxious with the consensus marking method compared to assessor judgement.

The four key themes identified from the interviews (accountability for learning; authentic assessment and grading method; feedback, dialogue, and immediacy; reflect and self-evaluate) support the concept that consensus marking facilitates the development of evaluative judgement. Participants noted that consensus marking provided the opportunity to reflect and evaluate their own performance while helping to self-identify future learning needs in a dialogue akin to the real-world clinical setting. The development of evaluative judgement through this novel method may therefore assist emergency nurses develop the ability to reflect and self-evaluate performance that supports lifelong learning beyond the conclusion of the course (Boud, et al., 2018).

Authentic assessment has been shown to improved learning outcomes for students (Villarroel, et al. , 2020). Participants in the current study perceived that consensus marking was authentic to their workplace with the discussion and feedback dialogue being similar to a clinical debrief with colleagues. If students perceive the learning activities as relevant to the workplace, then consensus marking may help students conceptualise learning, stimulate deeper learning and increase motivation for learning (Raymond, et al., 2013; Villarroel, et al., 2018).

Consensus marking also facilitated a student-focused approach to feedback dialogue, where the student drove the feedback conversation around their self-evaluation and negotiation of their grade. This is important as student dissatisfaction with feedback requires a change in approach (Carless & Boud 2018). The two-way collegial conversation in the consensus marking

enabled students to self-identify where they could improve, and the student-centred approach to the feedback dialogue resulted in greater satisfaction with the provided feedback and may have been a factor in the reporting of increased satisfaction levels in the SOVAS survey. The literature around feedback dialogue is lacking on how to engage students in feedback conversations (Ossenberg, Henderson, & Mitchell, 2018). The current study adds to the discourse regarding a potential method that actively engages students in feedback dialogue while also shifting power dynamics. Participants were empowered by engaging in a feedback dialogue where they were able to justify and explain their actions or omissions during the oral viva exam. The perception of having a voice and some control over the grading could be a contributing factor to the EAS survey reporting lower anxiety levels with the consensus grading method.

Students' anxiety level was lower prior to the oral viva exam with consensus marking compared to the viva that was judged by the assessor in all three domains (performance anxiety; academic self-concept and autonomic response; and familiar test anxiety). Anxiety has been shown to have an impact on cognitive ability and academic performance (Hooda & Saini, 2017). In this study, instances where the student believed that they would fail despite preparation was considerably less in the oral viva using consensus marking compared to the assessor judgement. The lower anxiety with consensus marking may be explained by a reduction in the perceived power imbalance between the assessor and student and might also explain the reduction in familiar test anxiety, negative academic self-concept, and excessive autonomic response. However, the possibility remains that because the consensus marking oral viva was conducted after the first oral viva this may have led to a learning effect / prior exposure, which resulted in a reduction in anxiety. To mitigate this, students were provided with explicit and transparent information and a video recording on the consensus method on commencement of the unit of study. Therefore, students were aware of the two different grading methods and expectations from the beginning of the semester.

5.9 Study strengths and limitations

The study has several strengths. The current study is the first to compare the application of two different marking methods for online oral vivas and provides preliminary evidence of the usefulness of consensus marking in this cohort of students adding to the discourse on engaging students in feedback dialogue and developing evaluative judgement. A rigorous approach was used to analyse qualitative data, with members of the research team independent to the data collection validating codes and themes. Further, validated tools were used to measure satisfaction and anxiety. However, some limitations are accepted. First, the one group, non-randomised design of the study means that we are unable to conclusively state differences in perceptions, anxiety, and satisfaction between the two marking methods, as the exposure to the first online viva and marking method may have impacted on these variables for the subsequent marking method and oral viva. Second, the researchers acknowledge that the student-tutor relationship creates an inherent power imbalance, and that the researcher (BH) was a tutor and assessor in this project. To mitigate the risk that non-participation may have negatively affected their relationship with the tutor, students were informed that the tutor was blinded to the consenting research participants. Further, the research team used moderation, reflexive journaling, and discussion to ensure equity in the assessment process.

5.10 Conclusion

Consensus marking provides an opportunity for students to reflect and self-evaluate their own performance which supports the concept of developing evaluative judgement. The consensus marking method appeared to improve students' understanding of feedback with students perceiving a reduction in the power imbalance between assessor and student. Consensus marking resulted in less anxiety and increased student satisfaction compared to a traditional assessor assessment of a postgraduate oral viva. The findings of this study may inform a larger randomised controlled trial, investigating different assessment types and how they support students to evaluate their own performance.

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Chapter Six

Developing student nurses' evaluative judgement in clinical practice tertiary education: a systematic scoping review of teaching and assessment methods

As published in Nurse Education in Practice

Henderson, B., Chipchase, L., Golder, F., & Lewis, L. K. (2023). Developing student nurses' evaluative judgement in clinical practice tertiary education: A systematic scoping review of teaching and assessment methods. *Nurse Education in Practice*, *73*, 103818–103818. https://doi.org/10.1016/j.nepr.2023.103818

The previous study explored students' perspective about the difference between traditional grading methods and consensus marking, as well as exploring whether using consensus marking influenced anxiety and satisfaction levels. This chapter presents a peer reviewed publication titled: *Developing student nurses' evaluative judgement in clinical practice tertiary education: A systematic scoping review of teaching and assessment methods* published in Nurse Education in Practice. *(Scimago Q1 – top 10%, 10/172 Nursing miscellaneous, Impact Factor 3.2, H-index 62)*. This review provides a useful foundation regarding the presence of, and methods for, delivering each of the features of evaluative judgement in nursing clinical practice teaching and assessment methods. The first part of this chapter provides additional context which was not included in the published article. This is then followed by the Word-formatted full publication.

An authorship declaration is included in Appendix 6.1. The publication is reproduced with the journal permission Appendix 6.2. Please refer to Appendix 6.3 for the PDF version of the article, as published in *Nurse Education in Practice.*

6.1 Additional context

Following on from the successful implementation of consensus marking as a grading method for oral viva assessments in a postgraduate emergency nursing subject, explored in Chapters Four and Five, the focus of the research shifted to embedding the pedagogical concept of developing undergraduate nursing students' evaluative judgement. Using consensus marking as a strategy to develop undergraduate students' evaluative judgement presented some challenges. Firstly, the oral viva exams were approximately 30 to 40 minutes per student to conduct. Engaging in the consensus marking process after the oral viva added another 15 minutes, therefore, the total time per student to assess and grade was close to one hour. In the postgraduate topic where consensus marking was introduced, the online oral viva exam was the only graded assessment for the topic, and the cohort was small (45 – 50 students). However, in the undergraduate program, at Flinders University, students have two or three assessments per topic and marking time allocated to educators is one hour per student. Also, the cohort size in the undergraduate program is 480 –

550 students per topic. These constraints meant that the oral viva using consensus marking as it was used in the postgraduate topic was not able to be feasibly implemented at the undergraduate level.

Demographic differences were also considered. At Flinders University the typical undergraduate nursing student cohort consists of 21% international students with 50% of students under the age of 24. International students cultural experience of learning combined with language barriers may make engaging in an oral viva exam, self-evaluation and feedback conversations more challenging (Graham et al., 2024). Therefore, seeking a strategy that would work in the undergraduate program required a step back to conduct some preliminary research to explore the concepts more broadly.

As identified in the background chapter, (Chapter Two), approximately half of undergraduate nursing education is undertaken the clinical practice setting. The clinical practice setting provides an opportunity for students to practice recognising what quality work looks like, comparing their work to others. Therefore, developing undergraduate nursing students' evaluative judgement in teaching or assessment activities in the clinical setting was a potential avenue to embed the pedagogical concept. However, situating developing evaluative judgement in the clinical setting required a broader view of how teaching and assessment is conducted in this setting. An exploration of the literature to establish the presence of any teaching and assessment methods that might deliver the features of evaluative judgement in nursing clinical practice settings was required.

6.2 Abstract

Objectives: This review aimed to systematically scope undergraduate or postgraduate tertiary higher education nursing students' clinical practice teaching and assessment methods to identify features that align with promoting students' evaluative judgement.

Introduction: Evaluative judgement is a new concept to nursing tertiary education. Currently, there are no published reviews of evaluative judgement in nursing clinical practice education. This review aims to assist nursing educators to operationalise the concept of evaluative judgement in clinical practice education. As such the starting point was to determine features of evaluative judgement in current clinical teaching and assessment designs.

Inclusion criteria: Peer reviewed qualitative or quantitative studies that have evaluated teaching and/or assessment of tertiary (university/higher education) pre-registration (undergraduate) or post-registration (postgraduate) nursing students' clinical practice.

Methods: The systematic scoping review was prospectively registered systematic review (OSF DOI 10.17605/OSF.IO/PYWZ6) reported using PRISMA guidelines. A systematic search of five databases (Medline, Scopus, Web of Science, ProQuest, CINAHL) was conducted, limited from 1989 onwards and in English. Two reviewers independently screened titles and abstracts, then full text, with disagreements resolved with a third independent author. Data were extracted, including the frequency and methods of developing students' evaluative judgement across the categories of discerning quality, judgement process, calibration, and feedback. A narrative synthesis was performed.

Results: Seventy-one studies were included (n=53 teaching, n=18 assessment). Most of the included studies, included some, but not all, of the features to develop nursing students' evaluative judgment. For teaching methods, the most identified evaluative judgement features in the included studies were discerning quality (n=47), feedback (n=41) and judgement process (n=21). Only three studies included a method of calibration. For the assessment methods, feedback (n=16),

discerning quality (n=15), judgement process (n=9) and calibration (n=4) were included. Many clinical practice teaching and assessment methods in nursing included features that develop students' evaluative judgement, with methods relating to discerning quality and feedback well embedded. Further adjustments are required to include methods to assist students to judge and calibrate their own performance.

Conclusion: This systematic scoping review identified that evaluative judgement in current nursing clinical teaching and assessment is not an overt aim. With minor adjustment to teaching and assessment design, nursing students could be better supported to develop their ability to judge the value of their own work.

6.3 Background

On completion of their studies, nurses enter the workforce as registered professional practitioners. This transition to clinical practice is often daunting as they no longer have access to clinical tutors or facilitators to provide direction and feedback on their performance (Hampton et al., 2020). Moreover, nursing regulatory standards expect qualified nurses to be reflective practitioners, able to recognise when they lack knowledge or skills, seek support and be lifelong learners to safeguard patient safety (NMBA 2016). Thus, it is incumbent on higher education providers to support students to develop these capabilities. One concept that provides a foundation for the development of these capabilities is evaluative judgement, and while not new, provides a language that could be embraced in assessment and teaching design (Fischer 2019; Boud et al., 2018).

The concept of self-evaluation was initially raised by Sadler, (1989 pg.110) who theorised that *"for students to be able to improve, they must develop the capacity to monitor the quality of their own work"*. This concept has been raised again in context of modern education and the term evaluative judgement has been introduced as *"the capability to make decisions about the quality of work of self and others"* and is increasingly viewed as an important graduate attribute for all health professionals (Hampton et al., 2020; Henderson et al., 2015; Tai et al., 2018). This is because

developing evaluative judgement is thought to support the transition from student to practitioner where structured support and feedback from educators is no longer available (Boud et al., 2018).

Nursing students' clinical practice is supervised by clinical educators, preceptors or facilitators who provide students with feedback on their performance (Gcawu and Rooyen 2022). Feedback methods within clinical practice education often fail to provide students with opportunities to engage in a dialogue with educators where they can explore and understand the assessment of their performance (Alfehaid et al., 2018; Atmaca 2016; Bijami et al 2016; Henderson et al. 2019; Nuuyoma 2021; Paterson et al., 2020; Wong and Shorey, 2022). This deviates from contemporary theories on feedback practices (Boud and Molloy 2012; Dawson et al.2018; Molloy & Van De Riddler 2018). Feedback should be positioned to provide students with opportunity for reflection, self-evaluation, and active participation in their learning, supporting the concept of developing evaluative judgement (Henderson et al. 2021, 2022; Johnson et al. 2016; Ilangakoon et al. 2021). Evaluative judgement as a defined graduate attribute is relatively new in nursing education (Ilangakoon et al., 2022). Many activities in current nursing clinical practice teaching and assessment methods are well positioned to support students' development of evaluative judgement, such as, reflection, self-evaluation/assessment, peer review, and co-creating assessments (Ibarra-Sáiz et al., 2020). This systematic scoping review will focus on the teaching and assessment methods used in clinical practice to assist nursing educators and curriculum designers operationalise the concept of evaluative judgement in clinical practice education. However, developing evaluative judgement is more than providing a selection of teaching activities or engaging students in reflection, self-assessment, or feedback conversations as it is a complex theoretical concept that involves orientating the learning pedagogies to include developing evaluative judgement as a learning outcome and should be scaffolded throughout the curricula (Boud et al., 2018).

Scholars in this field have identified a number of features needed to support students to develop this important capability (Boud et al., 2018; Gladovic et al., 2022; Johnson et al., 2016). Four features (discerning quality, judgement process, calibration, and feedback) have been

identified as having potential to provide educators with a framework for designing teaching and assessment activities to develop students' evaluative judgement. See Table 6.1 for the statement of meaning and examples of each feature.

Table 6.1 Statement of meaning and key features of evaluative judgement

Key Features	Statement of meaning	Examples demonstrating methods of delivery
Discerning quality	Providing students with an understanding of what good work looks like as a benchmark to judge their own work against (Boud et al 2018)	Students are provided with the following to help them identify what good quality work looks like: • Standards or protocols or guidelines (including policies) • Demonstration (including video recordings, practical demonstration from experts) • Instructions (including written instructions, verbal instructions) • Discussion (about the expectations or requirements with educators or peers) • For assessment methods - Exemplar/ or rubric (include examples of assignments, marking guides) • Pre assessment discussion (includes any discussions in class or online about the requirements of the assessment with the educator and/or peers)
The judgement process	Providing students with opportunities to practice judging their work. before expert judgement is given (Boud et al 2018)	Students were provided the following ways to judge their work: • Self-evaluate (including self-assessment) • Peer review (before grading by expert) • Comparison with others work (Others include, other students, peers, experts, to assist in self-evaluation before their work is judged) • Grade guessing (students self-assess with the purpose of grading their work before it is graded by an educator)
Calibration	Reviewing students' self-evaluation to challenge bias in the judgement process (Boud et al 2018). Challenging where the work was sub-standard and identifying where work met the standard, in partnership with the student, supports students to develop evaluative judgement (Ilangakoon et al 2022).	Calibration occurred if the self-evaluation/self-assessment was reviewed by the educator with the student.
Feedback	How feedback is delivered is key to successful engagement in fostering evaluative judgement (Molloy and Boud 2012) Facilitating a feedback conversation to help students adjust their judgement and calibrate to the required standard (Molloy and Boud 2012). Engaging students in reflection, self-evaluation, and feedback-dialogue to develop their skills in evaluative judgement (Ajjawi and Boud 2017; Ilangakoon et al 2022).	The feedback process was described as: • Feedback conversation (students were engaged in a verbal exchange with the educator) • Debriefing (students engaged in debriefing after a teaching or assessment activity) • Coaching (students were coached on how to improve following a teaching or assessment activity) • Written Automated, (written feedback was provided either asynchronously or synchronously, or answers were given after completing a quiz, or answers/suggestions for improvement were provided online/virtual reality activity)

Empirical research on evaluative judgement is limited (Khosravi et al., 2020), and research on observing students' evaluative judgement through teaching and assessing activities has been identified as a potential starting point for qualitative research (Gladovic et al., 2022). Integral to nursing education is the clinical teaching and learning activities where students can translate theory into practice (Jamshidi et al. 2016; Sweet and Broadbent 2017). How students are socialised to the profession can be influenced by the quality of the clinical practice educational experience (Erlam et al. 2018). The introduction of evaluative judgement to the clinical learning environment is particularly important to support students' clinical judgement (Høegh-Larsen, 2023). As such the starting point was to find the features of evaluative judgement in current clinical teaching and assessment designs.

This systematic scoping review focusses on the teaching and assessment methods used in clinical practice to assist nursing educators and curriculum designers operationalise the concept of evaluative judgement in clinical practice education. The aim was to systematically scope undergraduate and postgraduate tertiary higher education nursing students clinical practice teaching and assessment methods to identify the presence and type of features that align with promoting students' evaluative judgement.

The review question was: "What is known about the inclusion of features of evaluative judgement in undergraduate and postgraduate tertiary higher education nursing students clinical practice teaching and assessment methods"?

The findings from this review will inform educators on clinical practice teaching and assessment methods that may be adapted or replicated to support nursing students to develop evaluative judgement in clinical practice education.

6.4 Method

The review protocol was registered prospectively with the Open Science Framework DOI 10.17605/OSF.IO/PYWZ6 and reported using PRISMA guidelines for systematic reviews (Rethlefsen et al., 2021). The review followed the methodology outlined by Peters et al. (2015) for systematic scoping reviews. The review questions were developed using a Population, Concept, Context (PCC) framework presented in table 6.2.

Table 6.2 PCC Framework

ITEMS	OBJECT
Population	Nursing students
Concept 1	Evaluative judgement
Concept 2	Clinical practice
Concept 3	Teaching methods
Concept 4	Assessment methods
Context	University/tertiary higher education

The concepts evaluative judgement, clinical practice, teaching, and assessment methods were developed to search the literature for any evidence of evaluative judgement as an overt or unstated concept of clinical practice teaching and assessment methods.

6.4.1 Search strategy

Five electronic databases were searched from 1989 to April 27, 2022 (Medline, Scopus, Web of Science, ProQuest, and CINAHL) using a peer-reviewed search strategy supported by an academic librarian (Table 6.3). The search strategy included common terms for all PCC components, including the population and context (lines 1-2), evaluative judgement (line 4), clinical practice (lines 6-7), and teaching and assessment methods (lines 9-11, 13-14). In addition, line 9 of the strategy sought to capture the features of evaluative judgement, including feedback and self-evaluation, judgement, reflection, evaluation, and self-assessment.

Calibration as an activity is normally embedded in feedback, self-regulation, and self-evaluation, and was therefore not explicitly included as an individual search term. Wherever possible, both keyword and subject heading searches were completed in the databases. Citations were exported into Covidence© software and duplicates removed.

Table 6.3 Search strategy (Ovid Medline)

	SEARCH STRATEGY
1	(nurs* adj2 (student* or trainee* or postgrad* or undergrad*)).ti,ab.
2	students, nursing/
3	1 or 2
4	("life long learn*" or "self regulate*" or "sustainable assess*" or "assessment for learning*" or "evaluative judgement").ti,ab
5	3 and 4
6	("clinical practice" or "clinical competency" or "clinical skills" or "psychomotor skills" or "clinical knowledge" or competenc* or skill or ability* or aptitude or performance or capab* or proficien*).ti,ab.
7	Clinical competence/ or Preceptorship/
8	6 or 7
9	(("clinical skill*" or "practical skill*" or "clinical knowledge") adj3 (assess* or judge* or reflect* or regulat* or evaluat* or grade or mark or feedback or "peer review" or "self evaluat*" or "self asses*")).ti,ab
10	("clinical perform*" or "clinical practice" or "competency assessment" or "nurs* assessment*" or survey or report or measure or questionnaire or instrument or tool or scale or report).ti,ab.
11	educations measurement/ or curriculum/ or clinical education/ or nursing, practical/
12	9 or 10 or 11
13	((teach* or learn*) adj2 ("clinical skill*" or "clinical pract*" or pract* or clinical or "psychomotor skill*" or "procedural skill*")).ti,ab
14	Simulation training/ or psychomotor performance/ or nursing, practice/
15	13 or 14
16	5 or (3 and 8 and 12 and 15)

6.4.2 Study screening and selection

Two reviewers (BH/FG) screened 10 title and abstract citations independently and then met to discuss and compare interpretation of the eligibility criteria. Following this, the two reviewers independently screened all titles and abstracts. For any citations where the abstract was unavailable, or ambiguity existed, the citation was retained for full text screening. Conflicts were resolved through discussion between the reviewers and a third independent reviewer (LKL). Full text screening was similarly completed by two independent reviewers (BH/FG), with the third independent reviewer (LKL) consulted where conflicts were unable to be resolved.

6.4.3 Eligibility criteria

Inclusion

To be included, studies must have used an empirical design (qualitative or quantitative) and have evaluated teaching and/or assessment (formative or summative) of pre-registration (undergraduate) or post-registration (postgraduate) tertiary higher education (university) nursing students' clinical practice. Postgraduate students are Registered nurses who have graduated with an entry level nursing qualification and are seeking to further their skills and knowledge in a particular area. The search was limited from 1989 onwards, as the key concept of evaluative judgement was established in the literature by Sadler in 1989. This timeframe was also chosen to capture more contemporary and sustainable approaches to teaching and assessment in nursing clinical practice education. Only English studies were included. Peer-reviewed published studies were selected as they are scrutinised by experts in the field and are recognised as scholarly, scientific and of high quality (Kelly et al., 2014).

Nursing clinical practice was defined as direct and indirect clinical activities. Direct clinical practice activities included any intervention or treatment that was being learnt through patient contact (Kakushi and Martinez Evora, 2014; Lee and Park, 2016) such as taking blood pressure, medication administration, conducting a health or physical assessment, and therapeutic

communication. Thus, studies that were in a clinical setting, such as a hospital, clinic or surgery were included. Studies that were in a clinical teaching setting that mimicked the real clinical environment, such as simulation with manikins or actors role-playing patients, computer-based low, high or mixed fidelity simulated programs, and standardised patient scenarios were also included (Cant and Cooper, 2017). Education around indirect clinical practice activities such as leadership, documentation, or activities on behalf of the patient in the absence of the patient were also included (Peddle et al., 2019).

Exclusion

Citations were excluded if they were non-nursing, reported theoretical approaches to clinical practice teaching or assessment, or focused solely on student experiences related to clinical practice placements. Studies reporting on Higher Degree by Research students, or students in vocational programs such as nursing assistants were excluded. All grey literature, theses, reports, and conference abstracts / papers were excluded because there is no gold standard approach for rigorous systematic searching of grey literature (Adams et al., 2016; Godin et al., 2015). Grey literature does not go through the peer-review process as such the risk of bias may be higher (Higgins et al., 2011; Wong et al., 2013).

6.5 Data extraction

Two reviewers (BH and LKL) extracted the data from all eligible articles. Data were extracted including study characteristics, country of origin, aims, student characteristics, educational framework, teaching or assessment method and features of evaluative judgement – discerning quality, judgement process, calibration, and feedback. The narrative descriptions and content of the clinical practice teaching and assessing methods were extracted to identify the reported number of features of evaluative judgement, as well as the specific method for delivering each feature, for example, the feature of ‘discerning quality’ may have been included in a teaching method with the inclusion of written instructions for students as the method of delivery (please refer

to Table 6.1 for examples of methods demonstrating each of the features of developing evaluative judgement).

After data extraction, two authors (BH and LKL) conducted a check to identify any inconsistencies in the data extraction. Inconsistencies were resolved in consultation with the third author (LC).

6.5.1 Data synthesis

A narrative synthesis was conducted to address the aims of the review, with data from the included studies organised in terms of frequency of occurrence of the features of evaluative judgement (Joanna Briggs Institute 2022), and exploration of the clinical practice teaching and assessment methods under the framework of the features of evaluative judgement (Table 6.1). Critical appraisal to determine risk of bias was not completed, as the primary aim of the review related to identifying the features of evaluative judgement in the clinical practice teaching and assessment methods, rather than determining the effectiveness of these methods. Therefore, the appraisal related to appraising each of the teaching or assessment methods against the four features of evaluative judgement (Boud et al., 2018; Boud and Molloy, 2013; Gladovic et al., 2022; Johnson et al., 2016; Tai et al., 2018).

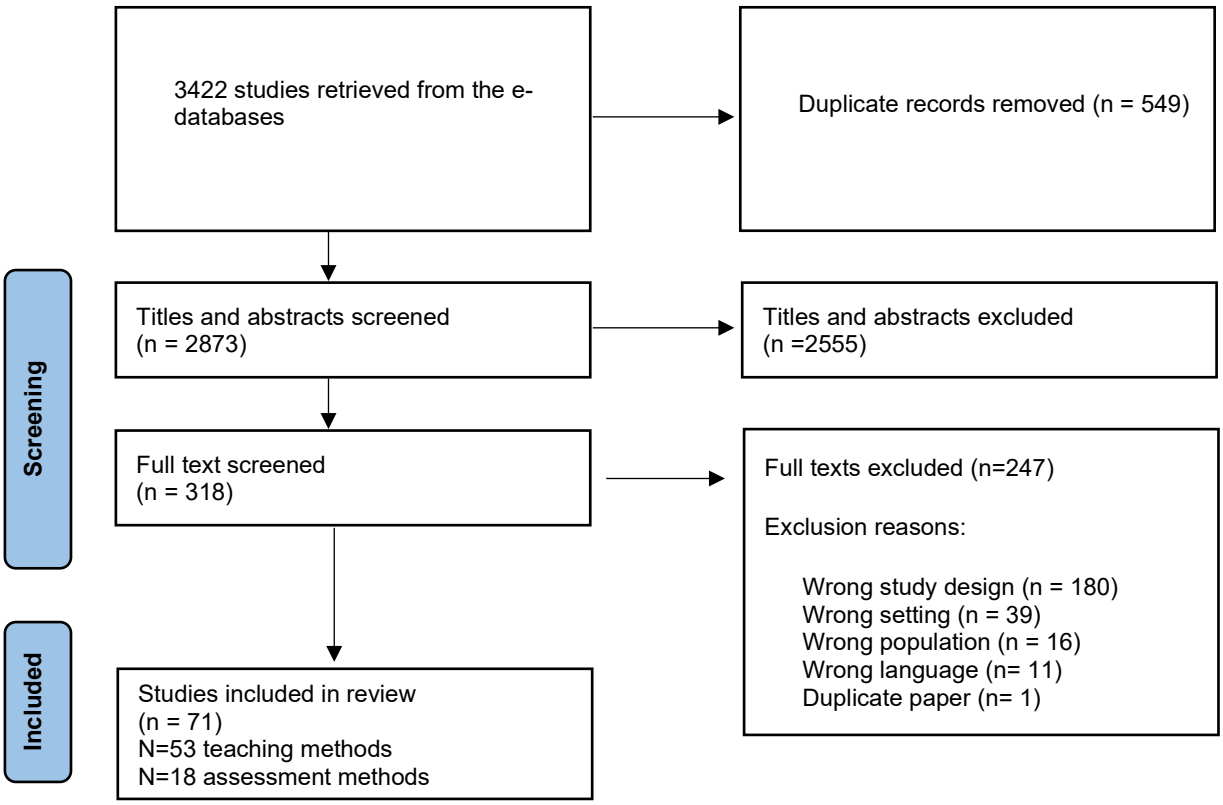
Studies reporting on teaching methods were separated from those reporting on assessment methods. For studies which reported multiple teaching and/or assessment methods, all were examined to determine the presence or absence of methods relating to the features of developing students' evaluative judgement.

6.6 Results

Study selection

A total of 3422 records were retrieved from the e-database search. Figure 6.1 shows the flow of studies through the review.

Figure 6.1 PRISMA Flow diagram



Adapted from: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

Following removal of duplicates, 2873 titles and abstracts were screened, followed by 318 full text articles. Seventy-one studies met the eligibility criteria and were included in the review. Of these, 53 included teaching methods in clinical practice education (Appendix 6.4), and 18 assessment methods in clinical practice education (Appendix 6.5).

Study characteristics

The 71 included studies were from the Middle East (n=22), Europe (n=18), Americas (n=16), Asia (n=11), and Australia and Oceania (n=4). Most of the studies (n=49) were published from 2011 to 2020, followed by 19 studies from 2021 to 2022, and three studies from 2000 to 2010. Sixty-one of the included studies included undergraduate (UG) student participants (n=22 1st year, n=7 2nd year, n=13 3rd year n=2 4th year, n=16 not reported), and eight studies included postgraduate (PG) student participants (n=3 1st year, n=1 2nd year, n=3 not reported). Three further studies (Kielo-Viljamaa et al., 2021; Lee et al., 2020; Sterling-Fox et al., 2020) did not report whether student participants were UG or PG. The mean age of student participants in the included studies was 22 years. For studies which reported multiple teaching and/or assessment methods, data were extracted from the 'main' teaching or assessment method, with alternative methods, either in the same group, or a comparator group, not including information related to any of the features of evaluative judgement.

The results are presented in order of the aims. Data related to teaching methods is presented first followed by data related to assessment methods.

6.6.1 Results of individual studies: teaching methods in clinical practice education

Fifty-three of the 71 included studies reported a clinical practice teaching method for UG or PG nursing students (a full description of these studies is included in appendix 6.4). Most of these studies used quantitative research designs (n=40), with a further seven qualitative studies and six studies using mixed methods.

The teaching methods included web based and virtual reality gaming (n=15), simulation using high and low fidelity manikins (n=15), simulation using manikins, and using video recording for demonstration or self-evaluation of practice (n=14), standardised patients using actors (n=5), clinical skill practice using real patients (n=1), clinical skill practice using peers (n=1), simulation

using imagery (n=1), case studies and peer to peer learning (n=1). Teaching activities were conducted face to face only (n= 33), online only (n=11), and both face to face and online (n= 9).

6.6.2 Evaluative judgement: teaching methods in clinical practice education

The 53 included studies reporting teaching methods in clinical practice education were evaluated for evidence of demonstrating the features of evaluative judgement, as outlined in Table 6.1 which were discerning quality, judgement process, calibration, and feedback (Boud et al., 2018). A summary of the features and characteristics of evaluative judgement identified in the teaching methods is included in Table 6.4. The most identified evaluative judgement features in the included studies were discerning quality (n=47), followed by feedback (n=41), judgement process (n=21) and calibration (n=3).

Table 6.4 Features of evaluative judgement identified in studies of teaching methods in clinical practice education (n=53)

Author	Discerning Quality						Judgement process					Calibration	Feedback					
	Occurred	Standards or protocols	Guidelines	Demonstration	Instructions	Discussion	Occurred	Self-evaluate	Peer review	Comparison with others work	Grade predicting	Occurred	Occurred	Feedback conversation	Debriefing	Coaching	Written	Automated, (e.g quiz)
Aggar, et al. 2018	Yes	x		x		x	Yes	x	x			Yes	Yes		x			
Aksoy and Pasli Gurdogan 2021	Yes			x	x		Yes	x				No	No					
Ali and John 2019	Yes			x			No					No	No					
Arabpur et al. 2022	Yes	x		x	x		No					No	Yes				x	
Bahar et al. 2017	Yes			x			No					No	No					
Basak et al. 2018	Yes	x	x	x	x		Yes	x				No	Yes		x		x	
Bayram and Caliskan 2019	Yes			x	x		No					No	Yes				x	
Cardoso et al. 2012	Yes			x			No					No	No					
Carrero-Planells et al. 2021	Yes			x	x		No					No	Yes		x			
Chang et al. 2022	Yes	x	x	x	x		Yes			x		No	Yes			x		x
Choi et al. 2021	Yes			x	x		No					No	Yes	x				x
de Lima Lopes et al. 2019	Yes			x	x		No					No	No					
Eyikara and Baykara 2018	Yes			x	x		No					No	Yes		x			x
Gray et al. 2019	No						Yes		x			No	Yes		x			

Key: Yes = this key feature was identified in the literature X = denotes what method was used

Cont. Table 6.4 Features of evaluative judgement identified in studies of teaching methods in clinical practice education (n=53)

Author	Discerning Quality						Judgement process					Calibration	Feedback					
	Occurred	Standards or protocols	Guidelines	Demonstration	Instructions	Discussion	Occurred	Self-evaluate	Peer review	Comparison with others work	Grade predicting	Occurred	Occurred	Feedback conversation	Debriefing	Coaching	Written	Automated, (e.g quiz)
Günay İsmailoğlu and Zaybak 2018	Yes			x	x		No					No	Yes				x	
Hardie et al. 2021	Yes		x			x	Yes	x				Yes	Yes		x			
Hart et al. 2014	Yes	x	x	x	x		Yes	x				No	Yes	x	x			
Hernández-Padilla et al. 2016	Yes			x	x		Yes		x	x		No	Yes			x	x	x
Higgins et al. 2019	Yes	x	x	x			Yes	x	x	x		No	Yes		x			
Hill et al. 2000	No						Yes	x				No	No					
Holland et al. 2013	Yes			x	x		Yes		x	x		No	No					
Hošnjak et al. 2019	Yes			x	x		No					No	Yes				x	
Ismailoğlu et al. 2020	Yes			x			No					No	Yes		x			
Jaberi and Momennasab 2019	Yes			x	x		No					No	No					
Johnson et al. 2014	No						Yes	x				No	Yes					x
Jones et al. 2014	Yes	x		x	x		No					No	Yes				x	

Key: Yes = this key feature was identified in the literature X = denotes what method was used

Cont. Table 6.4 Features of evaluative judgement identified in studies of teaching methods in clinical practice education (n=53)

Author	Discerning Quality						Judgement process					Calibration	Feedback					
	Occurred	Standards or protocols	Guidelines	Demonstration	Instructions	Discussion	Occurred	Self-evaluate	Peer review	Comparison with others work	Grade predicting	Occurred	Occurred	Feedback conversation	Debriefing	Coaching	Written	Automated, (e.g quiz)
Keys et al. 2021	Yes			x			No					No	Yes					x
Kim and Suh 2018	Yes			x			No					No	Yes					x
Kim et al. 2017	Yes	x	x	x	x		No					No	Yes					x
Kurt and Ozturk 2021	Yes			x	x		No					No	Yes				x	
Lee et al. 2019	Yes	x		x			No					No	Yes		x			
McWilliams et al. 2021	No						Yes		x	x		No	Yes	x	x			
Mehdipour – Rabori et al. 2021	Yes	x		x	x		No					No	Yes		x	x	x	
Miranda et al. 2017	Yes		x	x	x		No					No	Yes		x			
Onturk et al. 2019	Yes		x		x		No					No	Yes		x			x
Oz and Ordu 2021	Yes			x	x		No					No	Yes					x
Prentice and O'Rourke 2013	Yes				x		No					No	Yes		x			
Rahnavard et al. 2013	No						No					No	Yes			x		
Ravik et al. 2017	Yes	x	x		x		Yes		x			No	Yes	x	x	x		

Key: Yes = this key feature was identified in the literature X = denotes what method was used

Cont. Table 6.4 Features of evaluative judgement identified in studies of teaching methods in clinical practice education (n=53)

Author	Discerning Quality						Judgement process					Calibration	Feedback					
	Occurred	Standards or protocols	Guidelines	Demonstration	Instructions	Discussion	Occurred	Self-evaluate	Peer review	Comparison with others work	Grade predicting	Occurred	Occurred	Feedback conversation	Debriefing	Coaching	Written	Automated, (e.g quiz)
Rim and Shin 2022	Yes	x	x	x	x		yes	x	x			No	Yes		x		x	
Sarvan and Efe 2022	Yes			x	x		No					No	No					
Sezgunsay and Basak 2020	Yes	x		x	x		Yes	x				No	Yes		x		x	
Sheahan et al. 2015	Yes	x	x	x	x	x	No					No	Yes	x	x			
Smallheer et al. 2017	Yes				x		Yes	x	x			Yes	Yes	x				
Smith and Hamilton 2015	No						No					No	No					
Stayt et al. 2015	Yes	x	x	x			Yes				x	No	Yes				x	
Sterling-Fox et al. 2020	Yes			x	x		Yes	x	x			No	Yes				x	
Stone et al. 2020	Yes		x	x	x		No					No	No					
Strand et al. 2016	Yes		x	x	x		Yes	x	x			No	Yes		x			
Surabenjawonget al. 2020	Yes		x	x	x		Yes		x			No	Yes		x			
Tan et al. 2017	Yes				x		No					No	Yes				x	
Valizadeh et al. 2022	Yes				x		No					No	Yes		x			
Wright et al. 2008	Yes				x		No					No	No					
Total	47	15	15	39	36	3	21	13	12	5	1	3	41	6	22	5	14	10

Key: Yes = this key feature was identified in the literature X = denotes what method was used

***Discerning Quality**: method by which students can identify what quality work looks like.*

Eighty-seven per cent (n=47) of the studies reporting teaching methods were deemed to include the evaluative judgement feature of 'discerning quality'. These teaching methods provided students with a means to understand the standard that was required. The most common method to assist students with understanding the quality work was through demonstration (n=39), followed by standards and protocols, (n=15) and guidelines (n=15). Providing students with instructions was included in 68% of the studies reporting teaching methods. Thirty-six studies (68%) used two or more methods to assist students to understand what was required of them and what quality work looked like. Eleven studies only provided one method. Six studies did not report any method by which students could understand the standard that was required and an example of quality work.

***Judgement process**: method by which students can judge the quality of their work – before others pass judgement*

Forty per cent (n=21) of teaching method studies reported a method by which students could judge their performance before they were given feedback or judged by the clinical educator. The most common methods were self-evaluation (n=13) and peer review (n=12).

***Calibration**: if self-evaluation occurred did the educator review the student's self-evaluation to help calibrate them to the required standard*

Of the 13 studies which facilitated self-evaluation of clinical practice (identified under the judgement process feature), only three studies provided students with the opportunity to discuss their self-evaluation with a supervisor or educator so they could explore their perspective of performance against what was required.

***Feedback**: how did students receive feedback on their performance*

Seventy-seven per cent (n=41) of the included teaching method studies reported how feedback was given. The most common methods were debriefing (n=22), written feedback (n=14)

and automated feedback (n=10). The least common method for students to receive feedback on their performance was through feedback conversations (n=6).

Three studies reported teaching methods including all of the features to develop students' evaluative judgement (Aggar et al., 2018; Hardie et al., 2021; Smallheer et al., 2017). A further 12 studies included three of the four features for students to develop evaluative judgement (Basak et al., 2019; Chang et al., 2022; Hart et al., 2014; Hernández-Padilla et al., 2016; Higgins et al., 2019; Ravik et al., 2017; Rim and Shin, 2022; Sezgunsay and Basak, 2020; Stayt et al., 2015; Sterling-Fox et al., 2020; Strand et al., 2017; Surabenjawong et al., 2020) most commonly including characteristics relating to discerning quality, judgement process and feedback. The studies which reported three or more of the evaluative judgement features all used simulation laboratories commonly found in most nursing higher education facilities. Two studies (Chang et al., 2022; Rim and Shin, 2022), also reported three features of evaluative judgement for their teaching method which used virtual reality gaming and game-based platforms.

6.6.3 Results of individual studies: assessment methods in clinical practice education

Eighteen of the 71 included studies reported an assessment method for pre-registration undergraduate (UG) or post-registration (PG) nursing students. A full description of these studies is included in appendix 5.5. The majority of these studies used quantitative research designs (n=11), with seven using qualitative designs. The assessment methods used were OSCE (n=7), case-based assessments (n=5), simulated and individual skill observation (n= 4), oral viva (n=1), peer assessment (n=1). Assessment activities were conducted face to face (n=14), and (n=4) were online. In terms of resources and time required for the assessment methods in the included studies, 12 used high or low fidelity simulation laboratories, and three studies used case-based scenarios online. Two studies used virtual reality computer software to assess students. One study assessed students' clinical skills capability using real patients in the clinical placement setting of the student.

6.6.4 Evaluative judgement: assessment methods in clinical practice education

The 18 included studies reporting assessment methods were evaluated for evidence of demonstrating the features of evaluative judgement, including discerning quality, judgement process, calibration, and feedback (Boud et al., 2018). A summary of the features and characteristics of evaluative judgement identified in the assessment methods is included in Table 5.1. The most commonly identified evaluative judgement features in the included studies were feedback (n=16), followed by discerning quality (n=15), judgement process (n=9) and calibration (n=4). (Table 6.5)

Table 6.5 Features of evaluative judgement identified in studies of assessment methods in clinical practice education (n=18)

Author	Discerning Quality							Judgement process					Calibration	Feedback					
	Occurred	Exemplar/ or rubric	Standards or protocols	Guidelines	Demonstration	Instructions	Pre assessment discussion	Occurred	Self-evaluate	Peer review	Comparison with others work	Grade predicting	Occurred	Occurred	Feedback conversation	Debriefing	Coaching	Written	Automated, (e.g quiz)
Avraham A et al. 2021	Yes					x		Yes	x				Yes	Yes	x	x			
Borg Sapiano et al. 2018	Yes			x		x		No					No	Yes				x	
Chong et al. 2016	Yes	x	x	x		x		Yes	x				No	Yes	x				
Cormack et al. 2018	Yes	x	x			x		Yes	x				Yes	Yes	x	x		x	
Dogru and Aydin 2020	Yes	x	x	x	x		x	No					No	Yes			x		
Henderson et al. 2021	Yes	x						Yes	x				Yes	Yes	x			x	
Kielo-Viljamaa et al. 2021	Yes					x		No					No	Yes	x	x			
Lee et al. 2020	Yes	x						No					No	Yes				x	
Lynga et al. 2019	Yes		x			x		Yes		x			No	Yes			x		
Marquez-Hernandez et al. 2019	No							No					No	Yes		x			
Meskell et al. 2015	No							No					No	Yes				x	
Ositadimma Oranye et al. 2012	yes					x		No					No	No					
Rush et al. 2012	Yes	x	x	x	x	x		Yes		x			No	Yes		x			

Key: Yes = this key feature was identified in the literature X = denotes what method was used

Cont. Table 6.5 Features of evaluative judgement identified in studies of assessment methods in clinical practice education (n=18)

Author	**Discerning Quality**							**Judgement process**					**Calibration**	**Feedback**					
	Occurred	Exemplar/ or rubric	Standards or protocols	Guidelines	Demonstration	Instructions	Pre assessment discussion	Occurred	Self-evaluate	Peer review	Comparison with others work	Grade predicting	Occurred	Occurred	Feedback conversation	Debriefing	Coaching	Written	Automated, (e.g quiz)
Solheim et al. 2017	No							Yes	x	x			No	Yes		x			
Unsworth et al. 2016	Yes					x	x	Yes	x		x		Yes	Yes		x			
Uzellli Yilmaz and Sari 2021	Yes		x	x	x	x		No					No	Yes				x	
Watts et al. 2009	Yes				x	x		Yes	x				No	No					
Yildiz and Demiray 2022	Yes		x			x		No					No	Yes					x
Total	15	6	7	5	4	12	2	9	7	3	1	0	4	16	5	7	2	6	1

Key: Yes = this key feature was identified in the literature X = denotes what method was used

***Discerning Quality**: Method by which students can identify what quality work looks like.*

Eighty-three per cent (n=15) of the studies reporting assessment methods included the evaluative judgement feature of 'discerning quality'. These assessment methods provided students with a means to understand the standard that was required. The most common method to assist students with understanding quality work was through written or verbal instructions (n=12), followed by professional standards or protocols (n=7), and exemplars / marking rubrics, (n=6). The use of pre-assessment discussion, demonstration and guidelines were used less frequently. Fifty-six per cent (n=10) used two or more methods to assist students to understand what was required of them and what quality work looked like. Only four studies provided one method, and three studies did not report any method by which students could understand what standard was required and what quality work looks like.

***Judgement process**: Method by which students can judge the quality of their work – before others pass judgement*

Fifty per cent (n=9) of assessment method studies reported a method by which students could judge their performance before they were given feedback or judged by the clinical educator. The most common methods were self-evaluation (n=7) and peer review (n=3). One study provided opportunity for both self-evaluation and peer review before judgement was given by the clinical educator (Unsworth et al., 2016).

***Calibration**: If self-evaluation occurred did the educator review the student's self-evaluation to help calibrate them to the required standard*

Of the nine studies which facilitated self-evaluation of clinical practice (identified under the judgement process feature), only four studies provided students with the opportunity to discuss their self-evaluation with a supervisor or educator so they could explore their perspective of performance against what is required.

***Feedback**: How did students receive feedback on their performance*

Eighty-nine per cent (n=16) of the included assessment method studies reported how feedback was given. The most common methods were debriefing (n=7), written feedback (n=6) and feedback conversations (n=5). The least common method for students to receive feedback on their performance is through coaching and automated methods, e.g., quiz results or computer-generated responses, (n=1).

Assessment methods with high evaluative judgement components

Four studies reported assessment methods including all of the features to develop students' evaluative judgment (Avraham et al., 2021; Cormack et al., 2018; Henderson et al., 2021; Unsworth et al., 2016). A further three studies included three of the four features for students to develop evaluative judgement (Chong et al., 2016; Lynga et al., 2019; Rush et al., 2012). The most commonly included characteristics related to discerning quality, the judgement process and feedback. Five of the studies which reported three or more of the evaluative judgement features used simulation laboratories commonly found in most nursing higher education facilities. One study (Chong et al., 2016) situated the assessment in the clinical environment using real patients. One study (Henderson et al., 2021) used a simulated scenario online.

6.7 Discussion

This review aimed to systematically scope pre and post registration nursing clinical practice teaching and assessment methods to identify features that align with promoting students' evaluative judgement.

Implementing the concept of developing evaluative judgment into the teaching and assessment of nursing clinical practice could begin with embedding the four features discerning quality, judgement process, calibration and feedback into higher education curriculum design (Boud et al., 2018). Formative assessment has been identified as a place to introduce the concept

of developing evaluative judgment (Tai et al. 2018). However, teaching clinical practice provides many opportunities for students to practice self-evaluation and for educators to engage in calibrating students understanding of quality work and professional standards. Therefore, to isolate developing evaluative judgement only to assessment of clinical practice is a missed opportunity in curriculum design. Fostering students' ability to recognise quality work in their own and others' work is not achieved by introducing a few activities. It requires scaffolding to achieve development over time including multiple opportunities for students to judge themselves and their peers and to be supported by educators who focus on developing students' evaluative judgement as a learning aim (Boud, et al. 2018; Soledad Ibarra-Saiz et al. 2020; Yoshida et al. 2023). Most identified studies included some, but not all, of the features believed to promote the capability of evaluative judgment in nursing students.

Discerning quality

Most of the selected studies provide students with an understanding of what quality work looks like and the standard required to achieve quality work. The first feature discerning quality is important because if students are asked to judge their performance, they need to know what the standard is and what quality work looks like. Providing students with a benchmark to judge their performance in clinical practice teaching methods was most commonly achieved by providing a demonstration. Using video recordings and/or educators to demonstrate the clinical skill. In assessment methods, the most common methods to support students to understand the required standard was written or verbal instructions.

The judgement process

Providing students with opportunity to self-evaluate and judge themselves against the required standard before the educator provides judgement on their performance is an important step in fostering students' ability to recognise what quality work looks like and if their work is quality work. Developing this skill supports the concepts of reflective practice and life-long learning.

Across the included teaching and assessment methods, the feature of ‘judgement process’ was rarely reported, with students seldom provided an opportunity to judge their own performance. Without a purposeful reflective approach to the judgement process opportunity to refine and explore that judgement is lost.

Calibration

Of the few studies that reported student self-evaluation, most did not describe whether students were able to discuss this with educators. This may represent a missed opportunity as self-evaluation and calibration is thought to facilitate students to develop their understanding of quality work (discerning quality). Students who miss this opportunity may continue to over or underestimate their own abilities (Høegh-Larsen et al., 2023). It was interesting that so few of the included teaching and assessment methods incorporated methods to develop students’ judgement and calibration of their own performance. Facilitating students to judge and calibrate their own performance takes time and effort from both the student and the clinical educator (Lee et al., 2020). It is possible that methods of developing evaluative judgement were not prioritised due to perceptions of the time and resource burden. However, the seven studies that did include reviewing the students’ self-evaluation did not report any additional time or resources.

Feedback

Most of the selected studies reported that they provided students with feedback. This is in line with most university requirements and existing evidence on the value of feedback for learning (Ajjawi and Boud, 2017; Molloy and Boud, 2012).

Methods of feedback appeared most often in the form of a ‘debrief’ as expected in the clinical simulation environment. Interestingly the 22 studies that included three or more of the features of evaluative judgement in teaching and assessment activities were simulation based. Clinical simulation can serve as an effective educational method to provide nursing students with experience and learning opportunities in a safe environment. Clinical simulation in nursing most

commonly consists of a briefing, simulation conduct and a debriefing (Nyström et al., 2016). Specifically, the debriefing aims to foster students' performance, ability to identify and correct errors, clinical reasoning, decision making and clinical judgement (Dreifuerst, 2009; Fanning and Gaba, 2007). Debriefing has been shown to improve nursing student learning in clinical simulation (Lee et al., 2020), however, effective debriefing methods vary depending on the learning outcomes, the target learner, and the context. While debriefs are commonly used in simulation, educators may not always provide students sufficient "air time" to discuss their perceptions of their own performance (Blatt et al., 2008). As most of the included studies did not report how feedback or debriefing were conducted, it was difficult to explore whether students could engage in a 2-way feedback dialogue or if they calibrated their self-evaluation. Simulation using debriefing is well positioned to foster students' evaluative judgement if educators provide opportunities for students to reflect and judge their own performance before judgement is given, and for the students' self-evaluation to be calibrated using a bidirectional feedback conversation (Lee et al., 2020).

Learning is a dynamic process where students construct meaning and by engaging in verbal feedback, students can reason and explore through a social interaction with the clinical educator (Carless & Chan 2017). However, not all feedback is provided as a verbal conversation. This does not suggest that only verbal feedback is effective or can be used to provide students with opportunities to develop their evaluative judgement. The features of developing evaluative judgement include facilitating students to practice recognising what quality work looks like and judging their work, supported by educators, who calibrate their understanding through feedback. Therefore, feedback could be verbal or written, and there is no evidence to support one over the other in fostering nursing students' evaluative judgment. From an evaluative judgement lens, a feedback method should enable students to explore and reason with the clinical educator to better understand if their work is quality work and what quality work looks like.

6.8 Implications

This review has identified that current teaching and assessment methods in nursing clinical practice education have not widely embraced the concept of evaluative judgement in teaching and assessment design. Including the features of “judgement process and calibration” to current teaching and assessment designs has potential to foster and improve students' ability to recognise the value and quality of their work, thus developing their evaluative judgement. There are many implications for future research. This review provides a useful foundation regarding the presence of and methods for delivering each of the features of evaluative judgement in nursing clinical practice teaching and assessment methods. Future research should focus on the effectiveness of different methods of delivery and explore whether some aspects are more effective than others. Such an approach should also consider the views of educators and students, exploring student and educator satisfaction and resources required in the implementation of methods to develop evaluative judgement in nursing clinical practice education.

6.9 Strengths and limitations

This systematic review had several methodological strengths. A rigorous search strategy was developed, and peer reviewed by an academic librarian, and PRISMA reporting guidelines were used (Page et al., 2021). The protocol was registered prospectively. The search was prospectively planned to identify relevant studies from 1989 onwards, as this is when the term ‘evaluative judgement’ first appeared in the literature. It is possible that this may have resulted in missing studies which may have explored the features of evaluative judgement before this time. However, given there were no relevant studies identified in the decade from 1989 to 1999, we are confident that the findings represent the current evidence for evaluative judgement features in studies reporting contemporary nursing clinical practice teaching and assessment activities. Limitations of the study are linked to the lack of research in nursing on embedding evaluative judgement in educational practice.

6.10 Conclusions

Many nursing clinical practice teaching and assessment activities in the literature included features that develop students' evaluative judgement, with methods relating to discerning quality and feedback well embedded. Importantly, this review found that the features of judgement process and calibration are rarely conducted and/or reported in nursing clinical practice education. As such students may miss opportunities to self-evaluate and judge their performance. Without this opportunity, it could be argued that students are not practicing reflective or lifelong learning skills both of which are important graduate qualities.

Without addressing the students' evaluation of performance to calibrate their understanding of the quality of their work students are unlikely to improve their judgement process over time and will likely continue to under or overestimate their performance. Embedding the features of evaluative judgement in teaching and assessment design has potential to support students as they transition from student to autonomous professional where they will need to be able to judge the value of their work without an educator providing that judgement for them.

Future research should explore the effectiveness of different clinical practice education approaches that aim to foster students' evaluative judgement and whether incorporating all four features' aids student development of evaluative judgement. Future teaching and assessment activities for nursing students should explicitly aim to develop students' evaluative judgement, with a clear need for the development, implementation, and evaluation of these activities in the tertiary context, as well as exploring transitions into the workforce.

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Chapter Seven

Exploring student, academic and clinical educator perspective of feedback as a process to develop nursing students' evaluative judgement in clinical practice education: a qualitative study

Manuscript under review

Henderson, B., Aitken, R., Chipchase, L., & Lewis, L. K. (2024). Exploring student, academic and clinical educator perspective of feedback as a process to develop nursing students' evaluative judgement in clinical practice education: a qualitative study, under review.

The previous chapter presented a systematic scoping review of the literature exploring the presence of, and methods for, delivering each of the features of evaluative judgement in nursing clinical practice teaching and assessment methods. This chapter presents a manuscript titled: "*Exploring student, academic and clinical educator perspective of feedback as a process to develop nursing students' evaluative judgement in clinical practice education: a qualitative study".*

This final study provides insight into how feedback may provide opportunities to foster undergraduate nursing students' evaluative judgement. Embedding the concepts of evaluative judgement in feedback methods has potential to enrich the feedback process and cultivate essential skills and attitudes that support lifelong learning and professional development in undergraduate nursing students.

7.1 Abstract

Aim: To examine key stakeholders' perspectives of feedback practice and using an evaluative judgement lens explore avenues to embed the concepts of developing evaluative judgement as an aim of feedback in clinical learning settings.

Design: A qualitative study using the Co-creating Knowledge Translation framework (Co-KT)

Methods: Nursing students (n=8), academics, and clinical educators (n=11), completed an anonymous online survey and then participated in three workshops conducted in June 2023. Using an evaluative judgement lens, a six-phase thematic analysis of the data was used to explore patterns, meaning and relationships.

Results: An iterative reflexive approach to analysing the workshop data identified five themes: feedback is a shared responsibility, a standardised process, developing relationships, reflection and reflexive practice and feedback conversations. All elements of evaluative judgement featured across the five themes.

Conclusions: This study highlighted that student, academic and clinical educator perceptions of good feedback practice in clinical practice settings were closely aligned to the concepts of developing evaluative judgement. When feedback practice was reported as working well, participants embraced evaluative judgement concepts.

Impact: Evaluative judgement is the ability to judge the quality of your own and others' work. This study provides data that may support academics and clinical educators to develop students' evaluative judgement by incorporating the concept as an overt aim of feedback practice in nursing clinical practice settings.

Reporting method: To guide the reporting of the qualitative research the consolidated criteria for reporting qualitative research (COREQ) were used (Tong et al., 2007).

Public contribution: Clinical educators and academics from three universities and nursing students from one university participated in workshops to co-create ideas around embedding the concept of developing evaluative judgement as an aim of clinical feedback.

Keywords: Nursing, clinical practice education, evaluative judgement, feedback

Contribution to the global clinical community

- This study introduces the concept of developing nursing students' evaluative judgement, which is the ability to judge the quality of their own and others' work, in clinical practice education settings.
- Feedback may be used as a method to facilitate nursing students to judge the quality of their own and others' work to develop evaluative judgement in the clinical practice setting.

7.2 Introduction

Developing evaluative judgement is a new concept to nursing education. One way to develop undergraduate nursing students' evaluative judgment could be through feedback. The aim of this study was to examine key stakeholders' perspectives of feedback practice and using an evaluative judgement lens explore avenues to embed the concepts of developing evaluative judgement as an aim of feedback in clinical learning settings.

7.2.1 The importance of developing evaluative judgement.

On graduation from a bachelor's degree, nursing students transition to Registered nurses. An expectation of Registered nurses is that they are reflective practitioners able to identify gaps in their knowledge (NMBA, 2016). If Registered nurses are unaware of the quality or currency of their work and are unable to identify deficits in their knowledge, there is a risk that they may be unsafe practitioners (Zaitoun et al., 2023). The challenge for higher education is to equip nursing students with lifelong learning skills, and capabilities to identify learning needs beyond the completion of their degree (Boud and Falchickov, 2006; Boud and Soler, 2016). Methods for developing nursing students' lifelong learning capabilities are not well understood; with limited research focusing on strategies and elements of lifelong learning in higher education curricula (Hamra et al., 2018; Qalehsari et al., 2017).

A potential avenue to contribute to lifelong learning skills is to develop students' evaluative judgement. Evaluative judgement is *"the capability to make decisions about the quality of work of self and others*" (Tai et al., 2018). Evaluative judgement is a characteristic of competency, self-regulation, and lifelong learning (Boud et al., 2018). These are critical skills for Registered nurses, who are required to judge the safety and quality of their own and others' clinical practice (NMBA, 2016). The concepts of discerning quality, reflection, judgement process, calibration and feedback have been identified as important elements to develop students' evaluative judgement (Henderson et al., 2021; Henderson et al., 2022; Ilangakoon et al., 2022; Sadler, 1989; Tai et al., 2018).

Discerning quality involves students understanding what good work looks like and is fundamental to the learning process (Boud et al., 2018). When students have examples of good work and understand what good work looks like they can make judgements about their own work (Carless and Boud, 2018; Nicol et al., 2014; Sadler, 2010). However, some students may not be able to create good work even when provided with examples, therefore, feedback should also help students understand the required standard (Boud et al., 2018; Carless and Chan, 2017; Rung and George, 2021).

Reflection is a key element of developing students' evaluative judgement (Bearman et al., 2022). Reflecting and appraising work can help regulate students' learning, identifying where their skills are deficit or if their work meets the standard (Naidoo et al., 2021; Panadero et al., 2017). To enable *self-evaluation/self-assessment,* students need to reflect on their own work, however, reflection does not necessarily result in self-assessment. Therefore, to develop students' evaluative judgement, both reflection and self-assessment are required so that students can recognise if their work is quality work (Boud et al., 2018; McIver and Murphy, 2023; Ramlogan and Raman, 2022). Reflecting and appraising the standards and how work meets the standards develops students' evaluative judgement (Fitzgerald et al., 2021; Tai et al., 2016).

Self-evaluation/self-assessment is the focus of the *judgement process*, which can occur in isolation without judgement from others, or by comparing work with peers to identify components of work that are quality or below standard. Engaging students to actively identify standards to benchmark and judge their work can promote evaluative judgement (Chen et al., 2022). Recognising that self-evaluation can be biased, coupled with students potentially misunderstanding what the required standard is, means that the *calibration* process is an important step to help students develop evaluative judgement (Boud et al., 2018). This process involves others working with students to apply standards to their work to calibrate their judgement. Calibrating students' understanding of the standards and how their work meets the standards can occur in a feedback conversation (Johnson et al., 2016; Tai et al., 2018). Students should seek out and apply feedback

to their work through feedback conversations with supervisors, colleagues, and peers, supporting students to make sense of the feedback and refine their judgements (Bearman et al., 2022; Boud and Molloy, 2013).

To date, there is limited empirical research about developing students' evaluative judgement as an underpinning learning pedagogy. Current literature that evaluates methods of embedding the concept of evaluative judgement is mostly situated in medicine, and has occurred in the last few years (Bearman et al., 2022; Chen et al., 2022; Chong, 2021; Fitzgerald et al., 2021; Henderson et al., 2021; 2022; Ibarra-Sáiz et al., 2020; McIver and Murphy, 2023; Ramlogan and Raman, 2022; Tai et al., 2016), with discussion papers adding to the discourse (Bonvin et al., 2022; Ilangakoon et al., 2022; Molloy et al., 2020; Naidoo et al., 2021; Rung and George, 2021).

Cultivating a sustainable feedback culture and using feedback conversations is a strong theme in the existing literature on developing students' evaluative judgement (Bearman et al., 2022; Ilangakoon et al., 2022; Molloy et al., 2020; Naidoo et al., 2021). However, there is limited empirical evidence detailing how assessment and feedback should be positioned to foster students' evaluative judgement (Rung and George, 2021). It is also unclear how educators engage in feedback conversations, with feedback practice requiring improvement to support students to develop their evaluative judgement (Ibarra-Sáiz et al., 2020).

Nursing educators have yet to adopt developing students' evaluative judgement as a pedagogy to underpin teaching and learning activities, this has been demonstrated in two systematic reviews, where evaluative judgement was shown not to be an overt aim of clinical teaching and assessment in nursing (Henderson et al., 2023) and that the "*term evaluative judgement does not yet appear in the nursing and midwifery education literature*" (Ilangakoon et al., 2022 p8).

Clinical practice education represents approximately half of nursing students' undergraduate learning experiences (Arkan et al., 2018; Warne et al., 2010), the clinical setting,

either in hospitals or clinics, or through simulated activities where manikins or actors simulate a real clinical environment, is where undergraduate nursing students are socialised to the nursing profession (Salisu et al., 2019). The clinical learning environment provides opportunities for students to apply theory to practice, practice psychomotor skills, and develop professional behaviours, leadership, and teamwork (Gcawu and van Rooyen, 2022; Jafarian-Amiri et al., 2020; Levett-Jones et al., 2015).

To support nursing students' during clinical learning, they are supervised and assessed by clinical educators, also known as preceptors, supervisors, mentors, or facilitators. Clinical educators are pivotal in providing timely feedback to students in the clinical setting, which is an integral element of the learning journey (Tuomikoski et al., 2020). Feedback provided to students in clinical practice settings is often verbal and includes debriefing after simulation, or formal and ad hoc opportunistic feedback interactions with clinical educators, patients, peers, or nursing staff (Henderson et al., 2023). Feedback is considered authentic and sustainable when the aim is to develop lifelong learning skills of reflective practice and critical thinking (Dawson et al., 2019). However, clinical educators who assess and provide feedback to students possess varied skills and knowledge of feedback methods (Aase et al., 2022; Jayasekara et al., 2018; Pedregosa et al., 2020). Accepting that feedback is an important feature of the learning process and plays a critical role in the development of students' clinical skills and knowledge (Engstrom et al., 2017; Henderson et al., 2012), recent research has found that feedback provided in the clinical simulated or placement setting, is often didactic and educator-centric and fails to guide student learning (Burgess et al., 2020; Henderson et al., 2019).

Acknowledging that half of nursing education is allocated to clinical practice education, introducing the pedagogy of developing evaluative judgement to clinical and simulated clinical settings, where feedback is predominantly verbal, is an ideal starting point. Given the paucity of evidence regarding embedding evaluative judgement in feedback methods for clinical practice education for nursing students, exploring an approach to feedback that embeds the concepts of

evaluative judgement has potential to improve the quality of nursing education and develop nursing students' lifelong learning capabilities. Therefore, the aim of this study was to explore student, academic, and clinical educator perspectives of feedback and using an evaluative judgement lens explore avenues to embed the concepts of developing evaluative judgement as an aim of feedback in clinical learning settings.

7.3 Methods

7.3.1 Design

This qualitative approach used an on-line survey and three workshops to gather rich data generated by facilitated interaction between participants to co-create ideas around the concept of developing evaluative judgement as an aim of clinical feedback. All participants provided written informed consent, and the workshop configuration was designed to address the power imbalance that inherently exists between academics and clinical educators and students (Neiterman et al., 2022). The potential for students to feel intimidated or concerned about expressing their perceptions of feedback in the presence of academics and clinical educators was mitigated by initial separate workshops. Workshop 1 participants were undergraduate nursing students (n=8). Workshop 2 participants were academics and clinical educators (n=11). Workshop 3 was attended by students, academics, and clinical educators. In this combined workshop, the number of participants was reduced and there were unequal numbers of students (n=4) and academics/clinical educators (n=8), therefore, the workshop facilitator implementing measures to ensure that the student voice was heard in group discussions. Ethical approval (no. 5806) was gained from Flinders University Human Research Ethics Committee in December 2022. All participants provided written informed consent.

The Co-creating Knowledge Translation framework was used (Co-KT) (Kitson et al., 2013) to embed a knowledge translation approach from the outset. The first three steps of the Co-KT engaged participants to explore their perception of feedback and how feedback practice could embed the concepts of evaluative judgement: Step 1 - Initial contact and framing the issue:

participants were invited to explore the important elements of feedback, connecting them to the context of the research. Step 2- Refining and testing ideas: participants were engaged in exploring and refining their understanding of feedback and evaluative judgement, testing ideas on how feedback and evaluative judgment align. Step 3 - Interpreting, contextualising, and adapting the knowledge base: participants were engaged in contextualising what is already known about feedback and evaluative judgement and adapting their new understanding to the clinical setting.

7.3.2 Participants

There were two participant groups targeted for recruitment for this study, 1) nursing academics and clinical educators and 2) undergraduate nursing students.

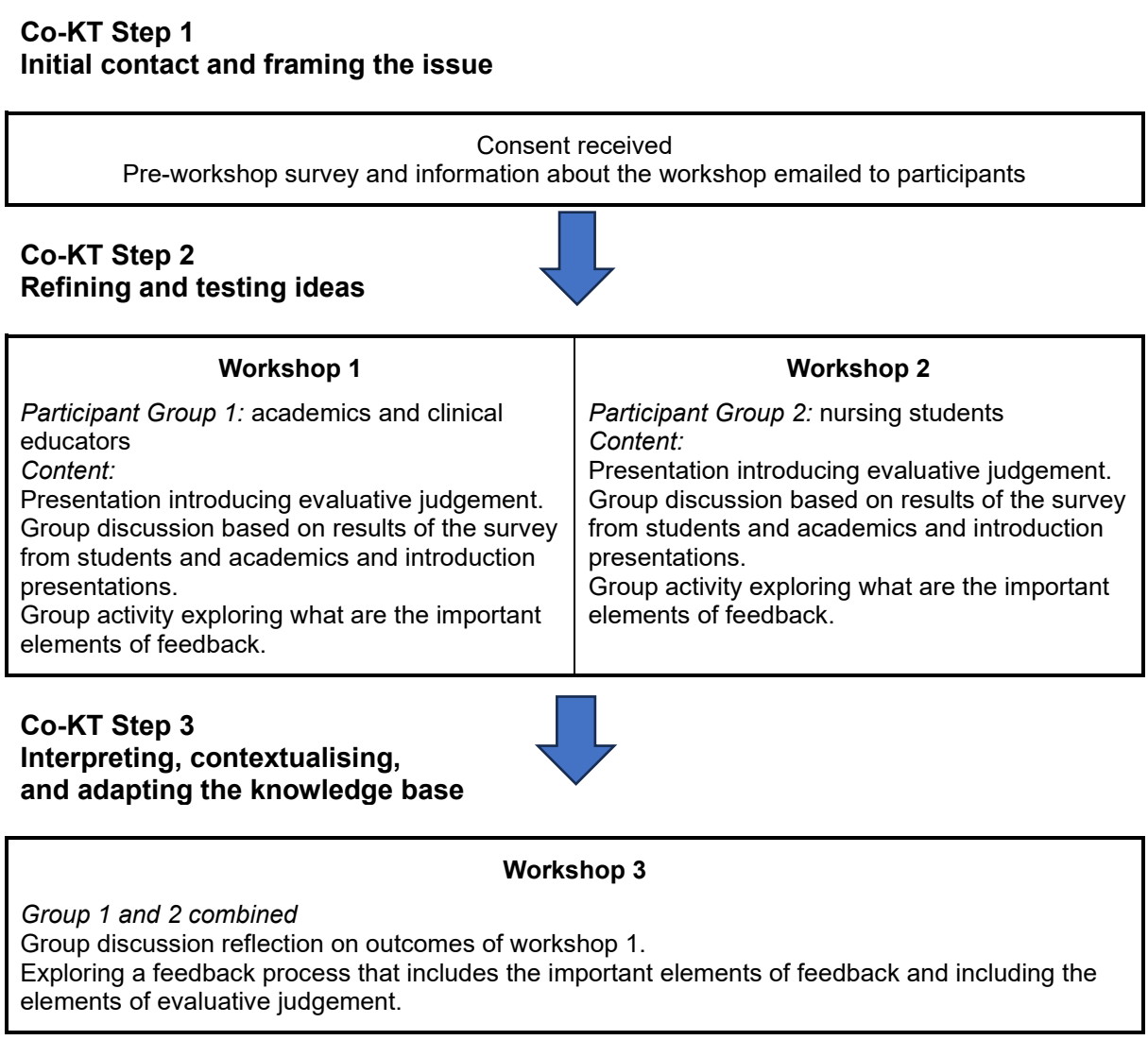
To recruit academic and clinical educator participants, purposive sampling was used. An invitation was emailed to the coordinators of undergraduate nursing programs of three universities. Coordinators were invited to identify academics and clinical educators, who teach nursing clinical subjects and/or assess students' clinical practice in simulated or clinical settings to participate. For inclusion, academics needed to be engaged in clinical education and/or research, and clinical educators needed to be Registered nurses engaged in the clinical teaching and learning activities of nursing students. There was no limit placed on the number of academic and clinical educator participants.

To recruit nursing student participants, a convenience sampling method was used. An invitation to participate was emailed to all 2nd and 3rd year undergraduate nursing students who were enrolled in clinical placement subjects, at one university. First year students were ineligible as they had limited experience of clinical practice settings. The total number of students invited to participate was 800. There was no limit placed on the number of student participants. Nineteen participants were included in the study, consisting of academics and clinical educators (n=11) from three universities, and undergraduate nursing students (n=8) from one university.

7.3.3 Procedure

Participants were required to complete an anonymous online survey, the link for the survey was embedded in an email that was sent to the participants one week prior to the workshops, followed by attendance at two facilitated workshops (online or in-person at a university campus), aligned with the Co-KT Framework. The workshop process is summarised in Figure 7.1.

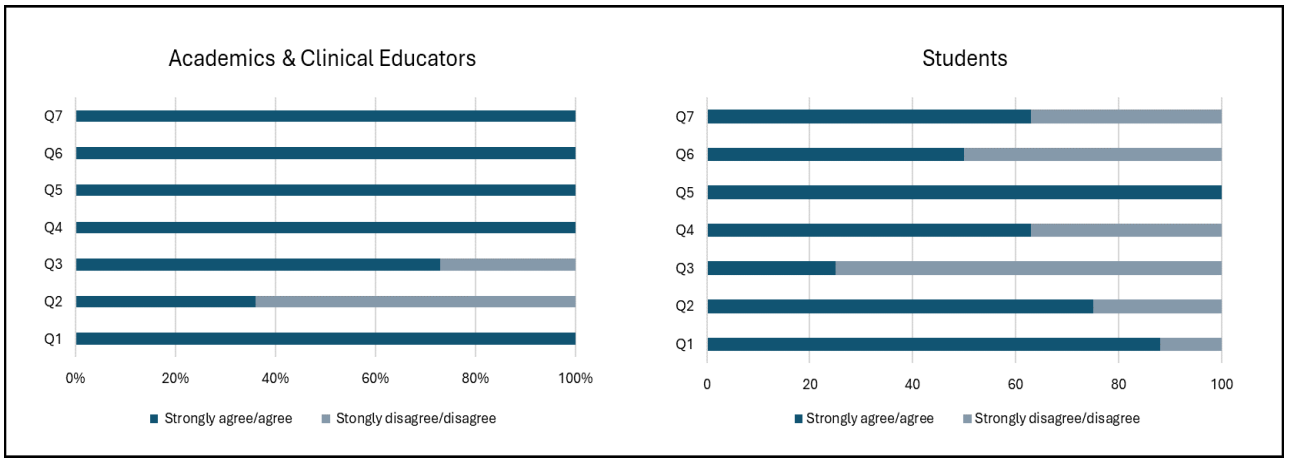
Figure 7.1 Workshop schedules and alignment with Co-KT Framework steps



The aim of the online survey was to engage participants in reflection on their experience of feedback in clinical practice settings. The online survey used a 5-point Likert scale ranging from strongly agree to strongly disagree. Demographic questions, for example, age and gender, were deliberately not included in the survey as these data were deemed unnecessary to fulfil the aims of

the study and could have led to participants being potentially identifiable in the small sample. The questions and responses to the online survey are summarised in Figure 7.2.

Figure 7.2 Pre-workshop 1 online survey results



*Collapsed strongly agreed/agreed and strongly disagreed/disagreed. Neutral was not chosen as an option by participants.

Question	Academics & Clinical Educators	Students
1	In the clinical practice setting: clinical laboratories when I give verbal feedback to students, I engage them in a discussion about the feedback.	When I receive verbal feedback, I am engaged by the tutor/clinical facilitator in a discussion about the feedback.
2	In the clinical practice setting: clinical placement, when I give verbal feedback to students, I engage them in a discussion about the feedback.	When I am given verbal feedback, I talk less than the tutor/clinical facilitator.
3	When I give verbal feedback, I talk more than the student.	When I am given verbal feedback, I talk more than the tutor/clinical facilitator.
4	Before I give verbal feedback, I give students opportunity to self-evaluate and judge their own performance before I tell them how they performed	Before I am given verbal feedback, I am given opportunity to self-evaluate and judge my own performance before the tutor/clinical facilitator tells me how I performed.
5	Reflecting on and self-evaluating performance is an important skill for students to learn.	Reflecting on and self-evaluating performance is an important skill for students to learn.
6	It is common practice for me to provide opportunities for students to engage in feedback conversations.	It is common for tutors/clinical facilitators to provide me with opportunities to engaging in a feedback conversation about my performance.
7	It is common practice for me to provide opportunities for students to self-evaluate and judge their own performance.	It is common for tutors/clinical facilitators to provide me with opportunities to self-evaluate and judge my own performance.

The workshops were facilitated by a person independent of the research team to prevent any perceived or actual bias. One researcher (BH) attended the workshops to take detailed notes of the participants' conversations, ensuring that all data were comprehensively collected. The first and second workshops were identical excepting for dividing the participants into two groups (Group 1: academics and clinical educators; Group 2: students). A summary of survey findings was presented in this workshop to initiate and stimulate discussion, alongside the purpose of providing a safe space for participants to initially express and share their individual feedback experiences without concern that student or academic/clinician views may be received negatively by the other participant group. The third workshop focussed on the concepts underpinning feedback practice, rather than individual feedback practices. Academics, clinical educators, and students attended the same second workshop together, (workshop 3), to promote cross pollination of ideas and rich discussion. All workshop sessions were two hours duration and workshop 3 was held three weeks after workshops 1 and 2. Participants engaged in group discussions in all workshops, the audio of discussions were recorded and transcribed. All written work produced by the participants during the workshops and notes taken by the researcher were captured using an online collaborative document. The recorded transcribed and written data collected during the workshops contributed to the thematic analysis.

7.4 Thematic analysis

Thematic analysis as described by (Braun and Clarke, 2019), provided a reflexive, iterative and flexible framework to review the survey and written and spoken workshop data, generating initial themes that emerged as being important to describe the phenomenon. Acknowledging that the participants focused on how they experienced and/or provided feedback, rather than the theory of feedback methods, data could be analysed from many different theoretical perspectives. However, the objective of the workshops was to explore feedback as a process that fosters evaluative judgement during nursing clinical practice education. Therefore, to explore the relationship between the important elements of feedback, the enablers, and barriers that the

participants reported, and the concepts of developing students' evaluative judgement, the researchers applied an evaluative judgement lens to the data. (Table 7.1).

Table 7.1 Example of methods that demonstrate the concepts of developing students' evaluative judgement (Boud et al., 2018).

Discerning quality Understanding the standards Comparing with others Exemplars/rubrics Clear criteria Assessing quality and trustworthiness of sources Using multiple sources of feedback to inform judgement of the quality of the work
Reflection On performance before feedback is given On feedback from peers or others
Judging work Self-evaluation Self-assessment Peer-assessment
Calibration Clarifying and exploring the students' self-evaluation of the standards Managing biases
Feedback as dialogue Helping students understand the feedback Student focused Students accepting responsibility to seek out feedback Students as active participants in feedback

The transcribed audio and written data collected from Workshop 1 were organised into the elements that students, academics and clinical educators described as important for good feedback and the elements that they identified as missing in current feedback practice (Table 7.2).

Table 7.2 Co-KT step 1: Framing the issue

What students and academics/clinical educators identified was important about feedback	**What students identified was missing in current feedback methods**	**What academics/clinical educators identified was missing in current feedback methods**
Making time for feedback	Time	Time
Follow up to check that students understand the feedback A relationship – academic/clinical educators' credibility and need to be approachable	Relationship with the tutor	Structure, tutor training, and moderation
Clear criteria and examples How to apply the feedback		Helping students understand and apply feedback
A two-way dialogue		Peer to peer feedback
Students as active participants Reflective practice		Activities for how students themselves can provide feedback constructively

* Themes identified by participants as important and missing for good feedback practice: Discussions in workshop one.

Aligned with Co-KT Steps 2 and 3, two independent researchers (BH and RA) reviewed the identified elements from Co-KT Step 1 plus written and transcribed discussions from Workshop 3 to identify emergent characteristics and the relationship of these characteristics to the key concepts of developing students' evaluative judgement. To mitigate bias and assess how and to what extent the researchers' assumptions and interests influenced the data analysis, an iterative reflexive process was used (Charmaz, 2006; Liamputtong, 2010). Using an iterative reflexive approach BH and RA worked together to identify 14 categories from all data sets and coded these as emerging characteristics. The two reviewers then independently grouped the emerging characteristics into eight initial themes. They then worked together again to critically examine the

decisions and interpretations made through focussed conversations, and checking, and rechecking the data that they had initially coded independently. Through this iterative process they grouped initial themes into the final themes. The final themes were mapped to the concepts of evaluative judgement (Table 7.3).

Table 7.3 Co-KT steps 2 & 3: Refining and testing ideas, interpreting, contextualising, and adapting the knowledge base

Categories: Emerging characteristics of good feedback practice and concepts of evaluative judgement	**Initial themes independently coded**	**Final themes**	**Alignment to the concepts of developing evaluative judgement**
Training for both staff and students on giving and receiving feedback Students need to seek out feedback and act on feedback Helping students understand and apply feedback	Feedback is a shared responsibility	Feedback is a shared responsibility	Discerning quality (what does quality feedback look like)
A familiar format Need time for feedback Judge the performance against standards, structure, and expectations Clear criteria and examples – how to apply the feedback	The process is important. A standardized approach. Clear expectations, criteria.	A standardised process	Discerning quality (what does quality work look like)
Time to build a relationship Students as active participants Empower students to be proactive	Building a student focused relationship is important. Students as active participants.	Developing relationships	Feedback as dialogue
Develop reflective and reflexive practice Enabling reflective and reflexive practice	Reflection and reflexive practice	Reflection and reflexive practice	Judging work
A two-way dialogue Active listening Feedback is a conversation	Feedback conversations	Feedback conversations	Calibration Feedback as dialogue

*Connecting the categories and identifying themes from workshop one & workshop two data.

When both positive and negative attributes of the same characteristic were identified, they were grouped together under the same theme. For example, 'training' was seen as essential for good practice and as missing when feedback practice was poor. Through this process some themes were discarded, and others added, until a point of saturation (five themes) was reached with no new themes emerging. Dependability was achieved by having all four members of the research team independently review the transcribed discussions and the collaborative documents to validate codes and themes. The relationships drawn between the themes described by the participants and the concepts of developing evaluative judgement were independently cross-checked by all four researchers (Creswell, 2018). An example of theme development is shown in table 7.4.

Table 7.4 Example of theme development

Final theme	Definitions	Descriptions	Example
Feedback is a shared responsibility	Expressing how both students and educators are part of the feedback process	Mention of concepts relating to feedback literacy/engaging in feedback/applying feedback can be expressed as feedback from clinical educators to students and students receiving feedback from educators	"*A lack of understanding or disconnect between delivering feedback to students and students accepting and recognising that this is feedback that I am getting"* (Academic, clinical educator: written)
A standardised process	Exploring ideas of how a feedback process could contain the important elements of feedback and concepts of evaluative judgement	Perceptions of a feedback process/method or approach to providing feedback. Or perceptions of evaluative judgement aligning to the feedback approach Can be any approach to feedback.	*"Having a standardised approach to feedback really making sure there is a shared goal"* (Academic, clinical educator: written)

Developing relationships	Exploring ideas of the importance of credibility, trust and a respectful relationship between student and educator	Perceptions of feedback as a relationship between student and educator. Perceptions of poor relationships impacting on feedback. Can be any information relating to the relationship between student and educator during feedback interactions.	*"after giving me feedback then she would give follow up… I reflect on what I did and then she would talk to me….feedback is not just words ….. it's a relationship"*(Student: verbal)
Reflection and reflexive practice	Exploring perceptions about reflection and self-evaluation and metacognition	Perceptions about reflection, self-evaluation, reflexive practice. Also, exploring challenges related to reflecting and self-evaluation.	"*we keep talking about self-awareness and metacognition about the ability to do reflection if you cannot reflect on how you think you did ….it is difficult for students to reflect when you ask them. Some don't have the ability to self-reflect yet it is something that people need to learn".* (Academic, clinical educator: verbal)
Feedback conversations	Exploring perceptions about feedback as a conversation	Perceptions about feedback as a dialogue, a conversation, a two way verbal interaction, a discussion, or any indication of bidirectional verbal interaction.	*"A discussion format, with the student given opportunity to identify strengths and weaknesses that I then go on to discuss with the student." (Academic, clinical educator: written)*

7.5 Results

Five themes emerged from the data, feedback is a shared responsibility, a standardised process, developing relationships, reflection and reflexive practice and feedback conversations.

Theme 1: Feedback is a shared responsibility

The clinical educators and academics presented a different view to that of the students and when the two views were synthesised, this theme gave a sense that feedback was a responsibility of both clinical educators and students. There was a level of dissatisfaction and some frustration expressed by both participant groups. Academics and clinical educators expressed that students' feedback literacy was sometimes deficient and students need to know how to receive and accept feedback, as shown by the following quotes:

"A lack of understanding or disconnect between delivering feedback to students and students accepting and recognising that this is feedback that I am getting" (Academic, clinical educator: written)

"Difficult for students to accept and recognise feedback, students need the context and understanding about feedback. Therefore, needs dedicated time and format so they [students] know how to receive and apply feedback" (Academic, clinical educator: written)

Students expressed frustration with clinical educators around the lack of consistency in skill and knowledge of feedback practice. Highlighting that students expect clinical educators to provide effective, timely and contemporary feedback as demonstrated by the following quotes:

"For feedback to be given promptly so that students can reflect and act on the feedback and for tutors to follow up with students about the feedback" (Student: written)

"Teachers and facilitators should be given guidelines on how well they do or construct feedback" (Student: written)

The theme "feedback as a shared responsibility" aligns with the evaluative judgement concept of discerning quality. Students and academics / clinical educators agreed that students should seek out feedback from multiple sources informing the judgement of the quality of their work. As demonstrated in the following quotes:

"Students need to be assertive and seek out feedback" (Student: oral)

"One of the more important would be the individual accepting feedback. If you are open to feedback, it can come from anywhere. Other staff, patients, family, visitors, whoever" (Student: oral)

Feedback as a shared responsibility was a strong theme, however, a tension existed between students and clinical educators, with both groups identifying deficits in each other's feedback literacy. The language used by academics and clinical educators was interesting, including: "*delivering feedback to students*" and "*students accepting feedback*." Whilst shared responsibility speaks to equality, the pervasive language suggests a hierarchy remains.

Discerning quality not only featured in relation to examples of good work but also for students to be able to discern and assess the quality and trustworthiness of the feedback sources. The idea that feedback can come from multiple sources, such as patients or peers, was explored by academics and clinical educators, connecting the need for students to develop the ability to recognise and discern the quality of feedback when it is provided to them.

"how do we empower or teach students to determine that discernment themselves …to decern what is valuable feedback and what is not" (Academic, clinical educator: oral)

"Students want to know who's feedback they should listen too, …who's feedback should they value" (Academic, clinical educator: oral)

Theme 2: A standardised process

Academics, clinical educators, and students perceived that a standardised approach to feedback was important, such as a verbal method that could be easy to remember and translate to any clinical setting as summative or formative feedback. As explained in the following quote:

"as soon as someone starts with a familiar format you go aha I recognise this is a feedback thing… The example of ISBAR none of us don't know how to use that if we had that sort of framework for feedback as soon as I start hearing it I know exactly what to think and I know what is coming next I know exactly what to do and how to respond". (Academic, clinical educator: oral)

As part of the standardised process, participants expressed that it was important that goals are shared, the criterion for giving feedback is clear and that detailed explanations or examples help students understand feedback. As explored by academics, clinical educators and students in the following quotes:

"Having a standardised approach to feedback really making sure there is a shared goal" (Academic, clinical educator: written)

"Clear criteria and examples – how to apply the feedback" (Student: written)

"Constructive feedback based on examples and provide feedback with explanation" (Student: written)

The theme "a standardised process" aligns with the evaluative judgement concept discerning quality by including ideas that the feedback process should have clear criteria, examples, and explanations around a shared goal. As highlighted by the following quote:

"Help students understand the best practice before providing feedback" (Academic, clinical educator: oral)

Theme 3: Developing relationships

A prominent theme was the relationship between students and clinical educators. Students expressed that they did not mind negative feedback, but they did want educators to care about their welfare. As demonstrated by the following quotes:

"objectively done as long it is not about me but the work" (Student: oral)

"Some teachers do not mind about the welfare of their student's; it means that they're just there to deliver what they need to teach" (Student: written)

"after giving me feedback then she would give follow up… I reflect on what I did and then she would talk to me….feedback is not just words ….. it's a relationship" (Student: oral)

Credibility was raised as a potential negative influence on the student/educator relationship. The participants explored that mutual respect, and a student focused relationship facilitates active engagement in the feedback process. As shown by the following academic, clinical educator quotes:

"The respect of the tutor's credibility and their currency in practice. Affects the reception of the feedback" (Academic, clinical educator: written)

"students want to know who's feedback they should listen too, …who's feedback should they value, understanding who's voice they should listen to is important" (Academic, clinical educator: oral)

The theme "developing relationships" aligns with the evaluative judgement concept of feedback dialogue, with students expressing a need for a respectful relationship with their educators so they can engage in a conversation. As demonstrated by the following quotes:

"my bad experience was she was very old school like a matron a dictator, very belittling… you could not have a two-way conversation with her" (Student: oral)

"Some tutors/facilitators don't listen and are not approachable" (Student: written)

Theme 4: Reflection and reflexive practice

A strong element of this theme from all participants was that reflection and self-evaluation was important. However, a lack of time was a constant weaving through the discussions as a barrier to providing opportunities for reflection and self-evaluation. As highlighted in the following quotes:

"Need more time to reflect and judge self" (Student: written)

"Missing dedicated time for feedback no time for self-evaluation" (Academic, clinical educator: written)

However, academics believed that students often lacked the skills required to engage in reflective practice.

"Metacognition – foster ability to achieve metacognition if you can't reflect on your thoughts or feedback you will not be able to engage with the process. Key in order to recognise quality work you need that metacognitive perspective" (Academic, clinical educator: oral)

The theme "reflection and reflexive practice" aligned with the evaluative judgement concept of providing students with opportunities to engage in reflection, self-evaluation and judging their performance. This theme explored the idea that the ability to reflect and self-evaluate is a skill that needs to be developed. As demonstrated by the following quote:

"we keep talking about self-awareness and metacognition about the ability to do reflection if you cannot reflect on how you think you did ….it is difficult for students to reflect when you ask them. Some don't have the ability to self-reflect yet it is something that people need to learn". (Academic, clinical educator: oral)

Theme 5: feedback conversations

The students wanted feedback in the clinical setting to be a conversation suggesting that the feedback process should be verbal rather than written. As shown in the following quotes:

"A two-way stream from the facilitator/teacher and the students. An open- communication is much better. Also, I find face to face feedback is better than a written one, because it is more interactive" (Student: oral)

"Two-way conversation with the tutor/facilitator" (Student: written)

The theme "a feedback conversation" aligns with the evaluative judgement concept of calibration and a feedback dialogue, where students are engaged in calibrating their self-evaluation to the required standard and learn from the feedback discussions, actively building their own understanding of what quality work looks like. As demonstrated in the following quotes:

"A discussion format, with the student given opportunity to identify strengths and weaknesses that I then go on to discuss with the student." (Academic, clinical educator: oral)

"Provide examples of best practice and why this is important. Provide feedback against the professional standard" (Academic, clinical educator: written)

7.6 Discussion

Using an evaluative judgement lens, this study aimed to examine student, academic, and clinical educator perspectives of feedback practice and explore avenues to embed the concepts of developing evaluative judgement as an aim of feedback in clinical learning settings. Five main themes were identified, with the elements of evaluative judgement featured across the themes. The evaluative judgement elements of 'feedback as dialogue' and 'discerning quality' featured across two themes, with the elements of 'reflection', 'judging own work' and 'calibration' appearing in one theme each. Good feedback practice as identified by students and clinical educators

included the elements of developing evaluative judgement, whereas when feedback practice was considered poor, elements of developing evaluative judgement were missing.

The concept of discerning quality was evident in the initial characteristics of the theme *a standardised approach* to feedback practice. Although the participants did not use the explicit term of 'discerning quality', a standardised approach, as envisioned by the participants, was to provide students with clear criteria about what quality work looked like. Participants expressed that a clear structure to the feedback process would help manage expectations, focusing students and educators on judging the performance against identified standards. This is consistent with previous conceptual work by Boud and Molloy (2013), who explored a new approach to feedback ("Feedback Mark 2") where good feedback is a learning approach, that helps students discern the required standard, and practice ways of judging their own work. Further theoretical discussion by Luo (2021) explored the notion that, to help students understand the quality of their work they need a clear understanding of the criteria to effectively self-evaluate.

Discerning quality was also a feature of the theme *feedback as a shared responsibility*. A tension existed between the students and clinical educators, with both groups highlighting feedback literacy deficits in one another. Clinical educators suggested that students should proactively seek feedback and be able to discern and assess the quality and trustworthiness of feedback sources. This assumes that students are not already making comparisons using multiple sources to generate their own internal feedback, suggesting that students are often exclusively reliant on the educator for information on the quality of their work (Nicol, 2021). Conversely, students expressed frustration with educators' ability to provide good feedback and suggested that educators should receive training to improve feedback practices. Feedback literacy is more than educators or students understanding feedback, or actively engaging in feedback, but is a symbiotic relationship between student and educator that is influenced by policies, systems, and feedback cultures within an organisation (Pitt and Winstone, 2023). Discerning what quality feedback looks like as a shared responsibility, between the provider and recipient of feedback, exposes the

complex nature of feedback as a socially constructed interaction influenced by multiple factors (Henderson et al., 2021; Paris, 2022).

The theme *reflection and reflexive practice* was identified by participants as an important component of feedback. Reflection, self-evaluation and judging your own or peers' work, are common teaching and learning activities in nursing but are rarely a focus of feedback practice. For example, students reflect or self-evaluate their work, but educators rarely discuss the reflection or self-evaluation to explore their understanding of the quality of students' work against the required standards as explored in a systematic literature review (Henderson et al., 2021; Henderson et al., 2023, 2022; Ilangakoon et al., 2022) Participants expressed concern that students lacked the metacognitive abilities to reflect on their performance. An individual's ability to reflect is an important factor in developing evaluative judgement, a concept supported by Bearman et al., (2022), in a qualitative study of general practitioner trainees (n=16), finding that reflecting on work to refine judgments on the quality of work is considered a critical component in developing evaluative judgement. Adachi et al., (2018) discussed the limitations of judging the value of ones work or the work of others when the approach is simply to compare the subjective correlation of grades to that of educators. Whereas, using an evaluative judgement approach to feedback, students reflecting and judging their performance against clear criteria means that the correlation to educators' grades is not the focus. Rather, the focus is to calibrate students' understanding of the criteria against their understanding of how their work meets the criteria. Embedding a process that facilitates students to reflect and judge the quality of their work in clinical feedback has potential to improve students' metacognitive skills over time (Clark et al., 2023).

The evaluative judgement concept of calibration and feedback as dialogue were evident in the themes *developing relationships* and *feedback conversations.* Participants identified that building a relationship was important, and without a relationship of trust and mutual respect, participants expressed that engaging in feedback conversations would be difficult. Developing a trusting relationship or an educational alliance between clinical educators and students is essential

to enable a safe and productive feedback conversation (Johnson et al., 2020; Telio et al., 2016, 2015). Without feedback conversations, students are passive recipients of feedback, unable to actively participate in calibrating their understanding of what quality work looks like (Johnson et al., 2019).

Participants identified that feedback was rarely an active collaborative process, which is a persistent concern in higher education (Ajjawi and Boud, 2017; Nicol and Macfarlane-Dick, 2006), with a lack of time identified as a significant barrier. Time constraints are often reported in the literature as a common barrier to effective feedback, with little change to the narrative for over two decades (Anderson, 2012; McCutcheon and Duchemin, 2020).

Participants suggested that a lack of time resulted in little opportunity to develop a relationship and was provided as a reason for why educators are not engaging students in reflecting on their performance or exploring their evaluation as partners in the feedback process. A lack of time was also raised as a reason why educators might provide feedback as a one-way dialogue rather than a feedback conversation. Time constraints underpinned all five themes.

7.7 Practice implications and future research

Over the past two decades the literature reports a shift in feedback practice towards a constructivist approach, situating students as active participants (Burgess et al., 2020; Molloy and Boud, 2012; Sadler, 2010). However, the experience and perceptions expressed by the participants in this study, suggests that feedback in nursing clinical education does not always reflect current expectations of good feedback practice (Johnson et al., 2019). Clinical educators vary in their abilities and competencies around the mentoring of students in clinical practice setting (Tuomikoski et al., 2020). Therefore, embedding the concepts of evaluative judgement as an aim of feedback would enable a process that supports clinical educators to provide an evidence-based structure for feedback in nursing clinical education. Reorientating the focus of feedback as a

learning activity, may help prioritise feedback as more than an exchange of information and afford more time to the feedback process as part of curricula design.

Exploring feedback through an evaluative judgement lens is a new approach in nursing clinical practice This study provides insights into how educators could adopt an evaluative judgement lens to inform feedback practice. Implementing a standardised approach to feedback that includes the elements of developing evaluative judgement provides students with 1) a clear understanding of the required standard (*what does quality work look like?)*, 2) offers students the opportunity to reflect and judge their performance prior to providing feedback and 3) reviews the students' understanding of what quality work looks like in a feedback conversation that engages students as active participants. This process has potential to improve the quality of clinical nursing education. However, this study is a snapshot in time with a small group of students and educators exploring a specific context. Further research is required to explore how to implement pedagogical change alongside current practice. Such an approach could take students and educators on a journey to incorporate evaluative judgement elements into feedback in clinical practice education, by building on practices that have been identified as helpful in achieving the characteristics of evaluative judgement. Further research could also explore how these current practices translate into ongoing development of clinical competency and lifelong learning skills following graduation.

7.8 Strengths and limitations

This study had several methodological strengths and limitations. The multiple perspectives of feedback practice captured in this study are a strength. Every effort was made to include students with clinical practice placement experience, and a range of educators from different tertiary institutions with varying levels of experience. While there was a drop off in attendance from student participants (n=4) from the first to the second workshop, every effort was made to capture all perspectives both within the workshops, and through the online survey. The use of an external facilitator also maximised the student voice, with student participants encouraged to engage and offer their perspectives during both workshops. The workshops, unlike interviews, were

collaborative, with people working together to co-create ideas. The idea or comments arising from the discussion were attributed as data from the participant as an academic/clinical educator or student. This attribution may not represent the multiple aspects of an individual's perspective. The perspectives expressed in this study were from a small number of participants from one Australian state and may not be generalisable to different contexts or geographical locations.

This study used a rigorous qualitative approach, underpinned by the pedagogical concept of evaluative judgement (Boud et al., 2018). Duplicate coding of data and identification of themes was conducted. All four members of the research team independently reviewed the data and validated the codes and themes and their relationship with the concepts of evaluative judgement, which were already validated in the literature.

7.9 Conclusion

The research on developing nursing students' evaluative judgement is in its infancy and the pedagogical principles are yet to be widely adopted in nursing education. This study identified that existing knowledge of effective feedback is not always occurring in clinical practice settings, highlighting that there is an evidence-practice gap. However, while not explicitly identified, the characteristics of evaluative judgement are recognised as helpful, with all elements identified when clinical feedback practice is considered effective. This foundational research provides a potential way for clinical educators to improve clinical feedback practice and bridge the evidence-practice gap by embedding elements of evaluative judgement in students' feedback. Encouraging educators to view feedback as an opportunity to foster students' evaluative judgement rather than a means to deliver information may improve feedback practice and develop students' lifelong learning skills

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Chapter Eight

Discussion

The overall aim of this program of research was to explore the concept of developing students' evaluative judgement through deliberate educational strategies. This chapter considers the broader context to the program of research, reviewing what is already known and exploring the contributions this program of research provides in advancing understanding of developing nursing students' evaluative judgement. My position in this research is reiterated and re-examined followed by a summary and synthesis of the findings of the four studies in the program of research, including comparison with the previous literature, in postgraduate and undergraduate contexts. A discussion of the strengths and limitations of the program of research follows, with a reflection on the gaps in knowledge that remain. Directions for future research and recommendations for higher education providers, accreditation bodies, nurse educators and nursing curriculum designers conclude this chapter.

8.1 My position in the research

In Chapter One, I outlined my world view and teaching philosophy. I have a pragmatic world view and a social and cognitive constructivist teaching philosophy, as such, this philosophical stance has shaped my approach to this program of research. To help nursing students gain insight into the quality of their work, in this PhD, I chose to explore the theoretical concept of evaluative judgement, a constructivist approach to teaching and learning. At the time of embarking on this research program, the theoretical concept of evaluative judgement aligned with my world view and teaching philosophy. I took a pragmatic approach to the program of research seeking strategies to embed the concepts of developing evaluative judgement in nursing education. Reflecting on how my world view and teaching philosophy have been influenced by the program of research, my

understanding of the concepts underpinning evaluative judgement has been strengthened, and my philosophical position on constructivism as a theoretical approach to education further affirmed.

Studies one and two explored concepts relating to evaluative judgement in postgraduate nursing education, they affirmed that a practical, and collaborative consensus marking assessment, could lead to increased student engagement in making evaluative judgements about the quality of their work. The concepts underpinning consensus marking (practical, collaborative, experiential, social, student-focussed) are key to social constructivist teaching and learning. As my understanding of evaluative judgement evolved over the candidature, I pivoted to start thinking about how evaluative judgement might be embedded differently in postgraduate and undergraduate nursing curricula. Recognising that undergraduate nursing students may require a different approach, further work was needed to explore an effective strategy, therefore, a systematic scoping review of the literature was conducted in study three. Study four increased my understanding of students', academics and clinical educators' perspectives by engaging in social interaction, dialogue, and shared experiences, a constructivist approach attempting to co-construct a strategy.

8.1.1 Summary of the program of research

This program of research was conducted across four studies and resulted in three published papers and one paper under review. The first two studies were situated in postgraduate nursing education while the final two studies expanded to also include undergraduate contexts. An opportunity to embed the concepts of developing evaluative judgement in postgraduate education provided a starting point for the research program. The first study (Chapter Four) explored postgraduate nursing students' perceptions about their experiences of online oral viva examinations and the use of consensus marking. Consensus marking was an assessment method designed using concepts relating to the development of evaluative judgement. This retrospective study found that consensus marking provided postgraduate nursing students with an opportunity to reflect and engage in a collegial discussion during the feedback conversation. Online oral vivas

were perceived by postgraduate students as an authentic assessment method, and while some students reported anxiety with the oral viva, students preferred the oral viva to written assessments. There were several ways that students expressed their preference for the oral viva exam, some reporting that focusing on learning relevant to their practice to prepare for the oral viva was better than working on academic writing and trying to find references.

Building on the findings from the previous study, the second study (Chapter Five) explored postgraduate nursing students' perceptions, anxiety and satisfaction of an online viva with consensus marking compared to traditional assessor judgement. Student anxiety levels were lower, and satisfaction levels higher when students engaged in consensus marking compared to a traditional grading approach. This study provided additional evidence that consensus marking created opportunities for students to identify their knowledge deficits through reflection and self-evaluation. The findings suggested that consensus marking as a method to grade summative online oral viva exams in a postgraduate emergency nursing course has the potential to develop students' evaluative judgement. The first two studies in postgraduate nursing education highlighted that self-assessment combined with engaging students in a feedback dialogue to arrive at a consensus on what quality work looks like was an effective method to embed the concepts of developing evaluative judgement in postgraduate emergency nursing online oral viva exams.

While the first two studies of the program of research explored concepts relating to the development of evaluative judgement specifically in postgraduate nursing education, there was a need to explore these concepts in nursing education more broadly. As most of nursing higher education occurs at the undergraduate-level, and in the clinical practice setting, the final two studies of the program of research shifted focus. Therefore, the third study (Chapter Six) systematically scoped undergraduate and postgraduate nursing clinical practice teaching and assessment methods in the literature to identify features that aligned with promoting students' evaluative judgement. This review identified and synthesised the current evidence underpinning

concepts relating to the development of evaluative judgement in undergraduate and postgraduate nursing education in the clinical practice setting.

The review identified that previous literature exploring the teaching and assessment methods used in nursing clinical practice education had not explicitly identified concepts relating to the development of evaluative judgement. However, many nursing clinical practice teaching and assessment methods did include some of the features that develop students' evaluative judgement, with methods relating to discerning quality and feedback well embedded. While feedback featured in the previous literature, it was unclear if self-evaluation or calibration of students' understanding was occurring in the feedback process. The judgement process (self-evaluation) and calibration were rarely reported, suggesting that students may have missed opportunities to self-evaluate their performance and manage biases through calibrating their understanding of the quality of their work against the required standard. Therefore, the findings suggested that students may not be provided with opportunities in teaching and assessment methods to develop their evaluative judgement in the clinical practice setting. This gap in the literature identified a potential avenue to develop nursing students' evaluative judgement in the undergraduate clinical practice setting. A clear need was identified to explore if students are provided opportunities to judge their performance and calibrate their understanding of the quality of their work, during the feedback process.

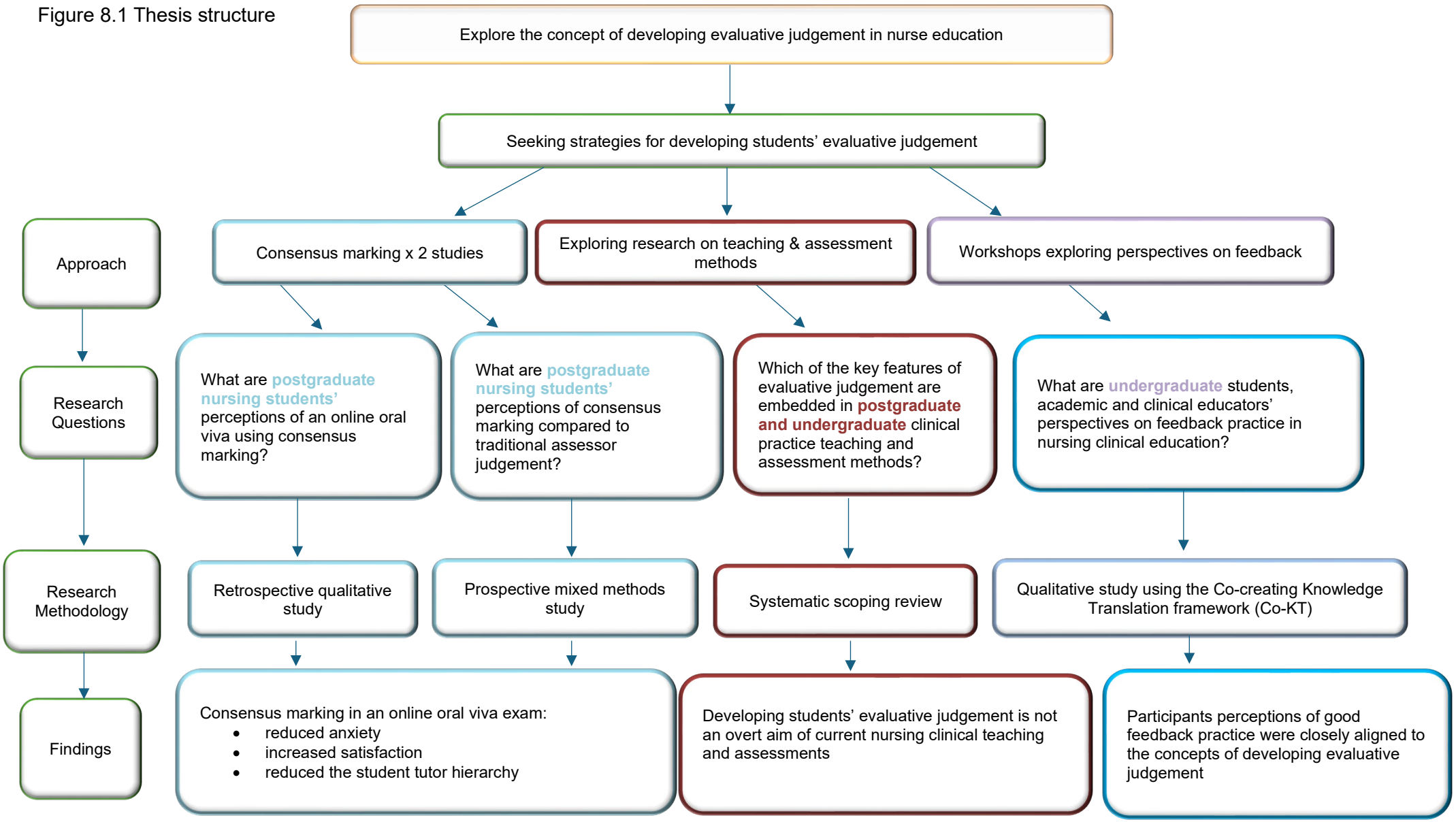
To address this need, the final qualitative study (Chapter Seven) explored student, academic, and clinical educator perspectives of feedback as a process to develop undergraduate nursing students' evaluative judgement in clinical practice education. Student, academic, and clinical educator perceptions of good feedback practice in the clinical practice setting were closely aligned to the concepts of developing evaluative judgement. As such, when feedback was reported as working well, participants embraced concepts relating to evaluative judgement. This study provided evidence that may support clinical educators and academics to incorporate concepts to

develop students' evaluative judgement as an overt aim of feedback practice in undergraduate nursing clinical practice settings.

In summary this program of research aimed to explore strategies for embedding the concept of developing evaluative judgement within both postgraduate and undergraduate nursing curricula. The four studies conducted in this program provided key insights into how evaluative judgement can be fostered in diverse educational contexts, both in theory and practice. The first two studies focused on postgraduate nursing education, investigating the use of online oral viva assessments with consensus marking as a strategy for promoting evaluative judgement. These studies found that consensus marking allowed students to engage in reflective self-assessment and feedback dialogues, helping them develop a clearer understanding of quality and performance. The third study broadened the scope to include both undergraduate and postgraduate clinical practice settings, highlighting the gap in the literature regarding the explicit inclusion of features of evaluative judgement in current clinical teaching and assessment. Building on this, the fourth study examined how feedback in clinical practice could be leveraged to foster evaluative judgement, finding that effective feedback practice was closely aligned with key principles of evaluative judgement.

Together, these studies contributed to answering the overarching research question: What are the possible strategies to develop students' evaluative judgement in undergraduate and postgraduate nursing education? by demonstrating the importance of self-evaluation, reflection, calibration and feedback conversations in developing evaluative judgement, and offering evidence for strategies to incorporate these elements into nursing education at both the undergraduate and postgraduate levels. A summary of the thesis structure is provided in figure 8.1

Figure 8.1 Thesis structure



8.2 Strategies to develop postgraduate nursing students' evaluative judgement

Prior to this program of research, only two primary research studies were identified that had explored strategies to develop evaluative judgement in postgraduate students (Chapter Two, section 2.4.2) (Bearman et al., 2022; McIver & Murphy, 2023). Both studies used qualitative methods, with one study undertaken with General Practitioner trainees (Bearman et al., 2022) and the other with healthcare students and educators of undisclosed disciplines (McIver & Murphy, 2023). At the time of commencing this program of work, there was a paucity of literature exploring the development of evaluative judgement in postgraduate education. The first two studies presented in this program of research contributing to emerging evidence at the postgraduate-level, and importantly, establishing new knowledge specifically in nursing. Table 8.1 provides a summary of the two previous studies in postgraduate education, alongside studies one and two from this program of research, focussing on postgraduate education.

Table 8.1 The main findings of the studies exploring the concept of developing postgraduate students' evaluative judgement.

Empirical evidence	Methods, sample size, population	Findings and features of evaluative judgement
Bearman et al 2022	Qualitative study (n=16) Interviews General Practitioner (GP) trainees	1. GP trainees judged the quality of their work by: Patient outcomes, behaviours, satisfaction or complaints. Feedback from credible sources Reflecting on emotional cues, e.g. "gut feelings" **Features of evaluative judgement:** judgement process and feedback
Henderson et al 2021 *Study one: Presented in this thesis Chapter Three*	Retrospective qualitative study (n=13) recorded responses to quality assurance questions Emergency Nurses	1. The two-way feedback dialogue actively engaged students in the reflective feedback discussion 2. Students were able to identify where they lacked knowledge and where they could improve 3. A democratic collegial discussion suggested a positive dynamic between student and assessor **Features of evaluative judgement:** judgement process, calibration and feedback
Henderson et al 2022 *Study two: Presented in this thesis Chapter Four*	Mixed methods study (n=46) Survey (n=13) Interviews Emergency Nurses	1. Students were significantly more satisfied and less anxious with the oral viva assessment when engaged in consensus marking compared with assessor judgement 2. Oral vivas made students accountable for learning 3. Oral viva using consensus marking was an authentic assessment and a grading method that translates to clinical practice 4. Consensus marking engaged students in: Feedback dialogue Immediate feedback Opportunity to reflect and self-evaluate Reducing the power dynamic between educator and student **Features of evaluative judgement:** judgement process, calibration and feedback
McIver and Murphy 2023	Qualitative study Healthcare Professionals (undisclosed disciplines) (n=42) Survey (n=6) Student Interviews (n=5) Staff Interviews	*Teaching staff perspective:* 1. Self-assessment engaged students actively in evaluating the quality of their work assessing if they met the criteria in the rubric 2. Students were seen to be taking responsibility for their learning 3. There was a reduction in students challenging grades following self-assessment activity 4. Staff noted that students increasingly appreciated the feedback *Students' perspectives:* 1. Self-assessment focused students' attention on their assignment writing and, on the feedback, provided 2. Peer assessment was not valued 3. Group feedback whilst less challenging to self-esteem could be confusing 4. Self-assessment was preferred **Features of evaluative judgement:** judgement process and feedback

Studies one and two (Chapters Four and Five) explored consensus marking as an approach to develop evaluative judgement through self-assessment. Only one previous study had explored self-assessment to develop evaluative judgement in postgraduate students (McIver & Murphy, 2023), however, unlike consensus marking, the method of self-assessment was asynchronous, with students marking their own written assignments against a rubric. A limitation of self-assessment is this activity can be reduced to a simple comparison of how accurately students grade their own work against educator grades, rather than aiming to develop students' understanding of the quality of their work (Aronson, 2022). McIver & Murphy (2023), and the consensus marking studies in this research program navigated this by requiring students to reflect on how they graded their work as part of the assessment. Engaging students in reflection created a deeper engagement in how the work produced relates to the criteria, as students in both studies provided their perceptions on the reasons why they ranked their work or performance as high or low. However, the studies differed in the calibration process, with educators reviewing students' self-assessment and providing written feedback that included the students' perceptions of their work in the study by McIver and Murphy (2023). In the first and second study in this thesis, students were engaged in calibration using a real-time feedback conversation, this may be more effective as students reported that instant feedback and dialogue clarifies understanding of the standard required and facilitated a learning process post assessment as described in the theme of *beneficial critical reflective conversations* and *feedback, dialogue and immediacy*. While there is emerging evidence that students can be supported to develop their evaluative judgement through self-assessment, particularly with the use of a real time feedback conversation, further evidence is required to explore the efficacy of different methods (e.g. real-time conversation versus written feedback), and student and educator preferences.

The feedback dialogue offered to students in consensus marking (studies one and two) helped students understand where their work met the standard and provided students with a voice reducing the teacher student hierarchy (Henderson et al., 2021; Henderson et al., 2022). However, these two studies did not explore what other feedback cues students were using to make

calibrations on the quality of their work. For example, inadvertent verbal or nonverbal cues from the examiner during the oral viva exam. In relation to the types of feedback cues that students use, Bearman et al. (2022), found that General Practitioner trainees used many different feedback cues, from patients, peers or their “gut feeling” and did not necessarily use feedback or instructions from their supervisors to calibrate their understanding.

Another consideration explored by McIver & Murphy (2023), and Bearman et al. (2022), was related to credibility. For example, the participants in these studies discounted supervisor or peer feedback that was incongruent with their own understanding of how they had performed. The students’ perception of the credibility of the person providing the feedback was not explored in the consensus marking studies. Therefore, while the findings provide a direction for educators, further research is needed to explore the effectiveness of feedback from a single source in supporting students’ evaluative judgement.

8.2.1 Potential strategies to develop evaluative judgement in the postgraduate context

To date, limited research has been conducted on developing evaluative judgement in postgraduate education. However, when taken together, the findings of studies one and two, along with previous literature, suggest several avenues for developing postgraduate students’ evaluative judgement. These include:

- *Self-assessment* - this method of assessment may improve students’ understanding of what good work looks like and make judgements about their own work.
- *Reflection* - encouraging engagement in reflecting on the quality of the work has potential to enhance the self-assessment process by moving students beyond making accurate estimations of their grade towards a practice of reflective thinking prompting critical self-evaluation.
- *Feedback* - how feedback is provided and perceived is an important consideration in helping students calibrate their understanding of the quality of their work. Further,

students may be using informal feedback from several sources to support their understanding of the quality of their work.

The research on consensus marking from the first two studies adds to existing knowledge by offering insights into a self-assessment method to enhance postgraduate students' evaluative judgement. A grading approach, underpinned by the concepts of developing evaluative judgement, advances the contribution to the theory of developing evaluative judgement in postgraduate nursing students by providing a practical strategy for nursing educators to implement.

8.3 Developing undergraduate nursing students' evaluative judgement

Prior to this program of research, there were only 10 primary research studies (Chapter Two, Section 2.4.2) identified that explored strategies to develop evaluative judgement in undergraduate students (Table 8.2). Four of these studies were conducted in health-related disciplines (Fitzgerald et al., 2021; Nicola-Richmond et al., 2024; Ramlogan & Raman, 2022; Tai et al., 2016), with none of these in nursing. These four studies suggested that feedback, self-assessment, scaffolding opportunities to explore what quality work looks like, and peer assisted learning support students to develop their evaluative judgement.

Table 8.2 The main findings of the studies exploring the concept of developing undergraduate students' evaluative judgement *(health related studies highlighted in blue)*

Empirical evidence	Methods, sample size, population	Findings and features of evaluative judgement
Cano Garcia et al 2024	Qualitative study (n=114) Education students- not identified as PG or UG an assumption is made that this is UG based on degree and course descriptions	*The study focused on improving the quality of peer feedback* 1. Feedback provided by peers improved in quality in the second loop. 2. Feedback quality was higher when related to procedural or stylistic assessment suggesting students feel less confident with providing feedback on complex concepts **Features of evaluative judgement:** judgement process and feedback
Chen et al 2022	Qualitative Molecular genetics students honour class (n=298)	*Using PeerWise was a useful platform for students to provide their peers with feedback for multiple choice answers and created a peer learning community* 1. Finding that students can identify where peers can improve suggesting that students recognised what quality work looked like **Features of evaluative judgement:** discerning quality
Chong 2021	Qualitative IELTS writing workshop (n=129)	*Exploring the use of dialogic exemplars the help students understand the standard required* 1. The use of dialogic exemplars in a writing course has benefits in helping students learning English understand the assessment rubric and as such offer opportunities to engage in self and peer assessment **Features of evaluative judgement:** discerning quality
Fischer et al 2024	Qualitative Physics students (n=5)	*Exploring how assessment drives learning* 1. Summative assessment in this study did not develop students' evaluative judgement. However, students engaged in incidental discussions in tutorials whilst preparing for the summative assessment with peers to discuss the quality of their work and how to do things in their studies. **Features of evaluative judgement:** discerning quality
Fitzgerald et al. 2021	Quantitative Osteopathy students (n=56)	*Exploring feedback sources in developing evaluative judgement* 1. Students who received multiple sources of feedback from self, peer and faculty assessment improved performance and their congruence in marks when conducting self and peer assessment 2. All participants perception of peer assessment became less positive and surface learning approaches increased 3. Participants might perceive formative assessment tasks and/or self and peer assessment as burdensome, rather than as a learning opportunity, especially closer to end-of-semester assessment **Features of evaluative judgement:** judgement process and feedback

Gyamfi et al 2022	Quantitative Students in a database principles course (n=354)	*The effects of rubrics on developing evaluative judgement* 1. Rubrics can positively but slightly impact students' agreement in assessing the quality of the learning resources 2. Evaluative judgement is demonstrated through students' ability to make decisions about the quality of learning resources produced by their peers and justify their decisions. **Features of evaluative judgement:** discerning quality
Ibarra-Saiz et al 2020	Quantitative Economics & business sciences students (n=301)	*Exploring developing student competence through peer assessment and the role of feedback, self-regulation and evaluative judgement* 1. Peer assessment is perceived by students as an element that promotes their competence development. 2. Evaluative judgement in terms of the students trust in their judgement and their peers' judgement is directly related to students' competence development, feedback, self-regulation and engagement are mediating factors in competence development **Features of evaluative judgement:** judgement process and feedback
Nicola-Richmond et al 2024	Quantitative Occupational therapist students (n=21)	*Seeking to understand the evaluative judgements made by students of their clinical practice* 1. Practice education experiences provide many context-specific opportunities for students to develop their evaluative judgement. 2. Students may be supported to come to know what quality work looks like by offering scaffolded opportunities **Features of evaluative judgement:** discerning quality, judgement process and feedback
Ramlogan & Raman 2022	Quantitative Dental students (n=55)	*Exploring self-assessment to develop evaluative judgement* 1. Students may adequately act as self-assessors at the beginning of their clinical work periodontology. 2. Self-assessment may potentially improve the clinical performance. Self-assessment may be nurtured through clear guidelines, educational training strategies, feedback and reflection leading to better evaluative judgement and lifelong learning **Features of evaluative judgement: j**udgement process
Tai et al 2016	Mixed methods Medical students (n=10) observed & interviewed (n=1189) questionnaire	*Explored the contribution of peer-assisted learning (PAL) in the development of evaluative judgement* 1. Interaction with peers, medical students in this study reported an improved understanding of performance targets, as well as how their own practice measured up against these targets **Features of evaluative judgement:** discerning quality, judgement process and feedback

Despite the limited number of studies exploring the development of evaluative judgement, themes emerged about the importance of reflection, self-assessment and helping students calibrate their understanding in a feedback process. The systematic review by Ilangakoon et. al., (2022), had previously explored the nursing literature looking for features of developing evaluative judgement in feedback methods. This review concluded that while some features of developing evaluative judgement were present the concept was not an explicit aim of feedback in nursing and midwifery. Therefore, it was also possible that the features of developing evaluative judgement (discerning quality, the judgement process, calibration and feedback), were already embedded in nursing clinical teaching and assessment methods but not explicitly recognised.

To explore all aspects of teaching and learning, and build on the findings of Ilangakoon's work, study three systematically scoped the literature to identify the presence or absence of the features of developing evaluative judgement in nursing clinical practice education teaching and assessment methods. Sixty one (86%) of the included studies in the review pertained to undergraduate nursing education. The main findings were that the features of developing evaluative judgement of discerning quality and feedback were included in most identified studies, but the features of judgement process and calibration were rarely conducted and/or reported. This suggests that students may be missing opportunities to practice their evaluative judgements of their or others' work in this setting. As the feedback process was rarely described, it is unclear if nursing students are engaging with clinical educators or peers in exploring their understanding of the quality of their work and calibrating their evaluations against the required standard.

When comparing the findings of the systematic scoping review to the previous research exploring evaluative judgement in undergraduate education, it was interesting to note that five previous studies found that interaction with peer and self-assessment (judgement process) helped students improve their judgements about the quality of their and others work (Cano García et al., 2024; Chen et al., 2022; Fitzgerald et al., 2021; Ibarra-Sáiz et al., 2020; Ramlogan & Raman, 2022; Tai et al., 2016). As previously mentioned, the judgement process and calibrating students

understanding of the quality of their work was rarely identified in the systematic scoping review in nursing clinical practice education (study three). This finding suggests that nursing education may need support to explicitly recognise and facilitate the judgement and calibration process. This suggestion is supported by the findings of Ilangakoon's study, that where teaching and learning activities such as reflection and self-assessment were used, there was no interplay with feedback (Illangakoon et. al., 2022).

Twenty nine of the included studies in the systematic review (41%) (study three), reported debriefing as the method used to provide feedback, however, only six studies (8%) reported that students reviewed their self-evaluation during the feedback process. The findings of the studies by Cano-Garcia et al., (2024), Chen et al., (2022), Fitzgerald et al., (2021), Ibarra-Saiz et al., (2020), Ramlogan & Raman (2022), and Tai et al., (2016), support that engaging in feedback helped students to make evaluative judgements about the quality of the work. Theoretical arguments explore the importance of feedback in developing evaluative judgement (Bearman et al., 2024; Nicol et al., 2014; Sadler, 2010; Tai et al., 2018), however, there remains little empirical evidence of how feedback is best situated to foster undergraduate students' evaluative judgement (Tai et al., 2018).

The systematic scoping review, study three, adds new knowledge by offering insights into current nursing clinical practice teaching and assessment methods, most studies included in the systematic scoping review were at the undergraduate level (n=61). This review identified which of the features of evaluative judgement are commonly, and rarely reported. The findings highlight the gaps in understanding that while feedback is a commonly reported feature, how students are engaged in the feedback process is not reported. It is not possible to determine from the literature if students are supported by educators during the feedback process to reflect on their performance and understand the required standard. Therefore, the least reported feature of calibration may or may not be occurring in the feedback process.

As feedback is an important feature of developing students' evaluative judgement more information was needed about how students, academics and clinical educators are engaging in the feedback process. The final study for this program of research, study four, (Chapter Seven), used qualitative methods with an evaluative judgement lens to explore undergraduate student, academic and clinical educators' perspectives of feedback in the clinical practice setting. The main findings were that feedback is a shared responsibility between everyone involved, that a standardised feedback process could improve how feedback is provided and received, and that the relationship between students and educators is important in facilitating good feedback engagement. Participants highlighted that reflection and reflexive practice are important aspects of clinical practice education and feedback conversations are preferred to written feedback. When the participants expressed what good feedback practice looked like, the four features of evaluative judgement were present (discerning quality: knowing what the required standard looks like, judgement process: reflecting on performance and self-evaluating, calibration and feedback conversations: managing biases or misunderstandings in the self-evaluation process through dialogue).

When comparing the findings of study four to other research in undergraduate level education exploring evaluative judgement, half of the 10 previously identified studies in undergraduate level education, explored feedback (Cano García et al., 2024; Fitzgerald et al., 2021; Ibarra-Sáiz et al., 2020; Nicola-Richmond et al., 2024; Tai et al., 2016). Much of the literature exploring feedback, however, was related to how peers provide feedback (Cano García et al., 2024; Fitzgerald et al., 2021; Ibarra-Sáiz et al., 2020; Tai et al., 2016). In particular, Nicola-Richmond et al., (2024), reported that feedback helped students understand the expected standard, and students liked regular structured feedback, but a lack of time was a barrier to feedback in clinical settings. This supported the findings of study four that time was a barrier to good feedback practice, and participants wanted a standardised feedback process. Similar to study four, where participants suggested that feedback can come from anyone, Fitzgerald et al., (2021), and Nicola-Richmond et al., (2024), found that students used a range of different sources to

understand what quality work looked like. These findings combined with findings in the postgraduate level studies from Bearman et al., (2024), and McIver & Murphy (2023), support the idea that feedback from an educator may not be the only source of information that students use to calibrate their understanding of what good work looks like and this may apply to both undergraduate and postgraduate settings (Bearman et al., 2022; Fitzgerald et al., 2021; McIver & Murphy, 2023; Nicola-Richmond et al., 2024).

Participants in study four expressed that how students use, or disregard, feedback may be linked to student perception of the credibility of the feedback source. Participants in study four indicated a lack of trust in educators' feedback, while participants in the studies by Fitzgerald et al., (2021) and Cano-Garcia et al., (2024) reported a lack of trust in peer feedback. Whilst the findings differ on the focus of who students perceived to provide credible feedback, it is an interesting gap in knowledge on how students might be making evaluative judgements on the quality of the feedback they receive.

The final study of the program of research adds new knowledge by offering insights into what undergraduate nursing students, academics and clinical educators perceived good feedback practices to be and how that aligned with the concepts of evaluative judgement. When the final study was designed it was thought that the participants might suggest a new approach to feedback that included the elements of evaluative judgement. However, it was found that a new approach or a new feedback method was not necessarily required, rather, a shift in the aim of feedback may be needed to embed developing students' evaluative judgement in the undergraduate clinical setting.

8.4 Strengths and limitations of the program of research

Each of the four studies outlined in this thesis included individual study-specific strengths and limitations, these are explored in the discussion sections within each study chapter. This section will explore the strengths and limitations of the program of research as a whole. A strength of this program of research was exploring the concept of developing evaluative judgement through

different research methods, with the four studies including, qualitative, quantitative, mixed methods and systematic scoping review designs. Using a range of methodologies provided diverse data which has offered deeper insights into understanding the research questions. Another strength is the contribution this research has made in an unexplored and under-researched area of nursing education with no previous studies identified that research evaluative judgement in nursing. Therefore, the studies within this program of research make a substantial contribution to the literature in nursing.

Whilst an effective strategy to embed the concepts of developing students' evaluative judgement in a small cohort of students was found for the postgraduate setting, the results are unable to be generalised to larger postgraduate cohorts or the larger student cohorts in the undergraduate program at Flinders University. Therefore, it was important to step back and conduct preliminary work before progressing the concept of developing evaluative judgement in the undergraduate setting. As such, study three and four provide foundational work and further research is needed to test a strategy to embed the concepts of developing evaluative judgement in undergraduate level nursing education. This thesis explored Registered nursing standards as they relate to Australia, it is acknowledged that the United Kingdom, United States, New Zealand and other countries have different standards for practice. Therefore, the finding of this research may not be generalisable to other countries or contexts. Also, a limitation of this work is that while evaluative judgement is reported to have been developed, there is no evidence of its application in the clinical context. Another limitation of this program of research is the generalisability of the results as the studies were conducted predominantly at one university and students from one institution in Australia, meaning that these results may not be transferrable to other cultural groups and other university institutions.

8.5 Suggestions for future research

This thesis presented a strategy (consensus marking) and a potential avenue (feedback in the clinical setting) for developing postgraduate and undergraduate level nursing students' evaluative judgement. Prior to this program of research, no other primary evidence could be found that explored developing nursing students' evaluative judgement. Also, of the 12 primary studies found, in postgraduate and undergraduate education, that have researched evaluative judgement, four were published after the studies in this program of research had been conducted (Cano Garcia et al 2024; Fischer et al 2024; McIver and Murphy 2023; Nicola-Richmond et al 2024) and seven were conducted during this program of research (Bearman et al., 2022; Chen et al., 2022; Chong, 2021; Fitzgerald et al., 2021; Gyamfi et al., 2022; Ibarra-Sáiz et al., 2020; Ramlogan & Raman, 2022). When this program of research commenced, most of the previous exploration into the concepts of developing evaluative judgement was theoretical. As interest in the concept of developing students' evaluative judgement expands there are many directions for future research. Table 8.3 summarises future research suggestions arising from this program of research.

Table 8.3 Future research suggestions for postgraduate and undergraduate curricula

Area	Direction
Feedback, verbal and written	1. Develop and test a feedback and/or debriefing process that overtly aims to develop evaluative judgement in undergraduate clinical practice settings 2. Develop and test an educational program for clinical facilitators/mentors/preceptors on how to facilitate feedback conversations that overtly aim to develop nursing students' evaluative judgement
Translation to practice	3. Conduct longitudinal studies to explore if pre and post graduate nursing students have developed evaluative judgement and self-regulated learning and if they apply these skills to their everyday clinical practice

Curricula design	4. Explore strategies to embed developing evaluative judgement across the curricula, for example, in teaching activities, assessment and feedback
Concepts of evaluative judgement	5. Explore how nursing students are developing their evaluative judgement, e.g. what cues are students using to make evaluative judgements

8.6 Recommendations

This program of research is the first to explore developing evaluative judgement in nursing education as such this foundational work provides data that could be used by stakeholders in nurse education and suggests the following recommendations. Higher education providers could integrate evaluative judgement as a core pedagogy and essential graduate quality to foster lifelong, and self-regulated learners. Accreditation and registration bodies, such as the Australian Nursing and Midwifery Accreditation Council (ANMAC) and the Nursing and Midwifery Board of Australia (NMBA), could consider collaborating with industry stakeholders to assess the relevance of evaluative judgement and consider evaluative judgement as a graduate outcome for inclusion in curricula. Curriculum designers could consider collaborating with clinical educators and academics, to explore the integration of evaluative judgement as an underpinning design feature in nursing education. Academics and clinical educators could innovate ways to engage students in developing their evaluative judgement by integrating consensus marking, adapting feedback practices and designing authentic assessments that encourage reflective practice. Both academic and clinical educators should also consider scaffolding activities to help students recognise quality work, model evaluative judgement and ensure clarity in assessment criteria. And finally, students should be encouraged to actively participate in their learning through engaging in feedback, practicing their metacognition and exploring their understanding of what good work looks like. Figure 8.2, explores a broad range of recommendations with the bold text highlighting recommendations that have arisen during the program of research

Figure 8.2 Recommendations

Higher Education Providers

1. Consider evaluative judgement as an underpinning pedagogy for higher education
2. Consider evaluative judgement as a graduate quality, to demonstrate students possess the qualities of lifelong, self-regulated learning and reflexive practice
3. Provide guidelines and professional development for educators to support their understanding of developing students' evaluative judgement
4. Provide technologies such as online peer review platforms, e-portfolios and interactive discussion forums where students can practice comparing their work with others and practice making evaluative judgements in a collaborative environment

Students

1. To be open to feedback from multiple sources to inform understanding of what good work looks like
2. **To be active participants in the feedback process**
3. **Practice metacognition to promote deeper thinking about the quality of work**

Accreditation and Registration Bodies

1. Consult with industry stakeholders to explore if developing evaluative judgement aligns with industry needs and expectations
2. Consider updating accreditation standards to include evaluative judgement as a required competency for nursing graduates
3. Consider integrating evaluative judgement into competency frameworks

Curriculum Designers

1. Work with researchers, academics and educators to **develop rubrics, assessments, and teaching activities that embrace the concepts of developing evaluative judgement across the curriculum**
2. Explore if developing evaluative judgement is generalisable across different student cohorts
3. Use data-driven analytics to provide insights into students' performance and engagement in collaborative and online activities that foster their evaluative judgements

Nurse Educators: Academics, Clinical Educators, Mentors/Preceptors

1. Develop and test innovative ways to foster students' engagement in developing their evaluative judgement
2. Consider using consensus marking in other assessment methods
3. **Consider adapting current feedback practice to include the concepts of developing evaluative judgement**
4. Scaffold activities for students starting with recognising criteria and quality work, providing multiple opportunities to develop their evaluative judgement over the program of education
5. **Design authentic assessments that foster reflective practice creating opportunities for students to evaluate their work and act on feedback**
6. Model your evaluative judgement by sharing your thoughts, processes and criteria when grading and assessing students work
7. Review how you demonstrate the required standard, for example, in the assessment instructions, rubrics and clinical tasks, is it possible for students to understand what good work looks like and/or what is the required criteria that students work will be judged against

8.7 Conclusion

This program of research aimed to explore the concept of developing evaluative judgement in nursing education. Embedding the concept of developing evaluative judgement within both undergraduate and postgraduate nursing curricula has the potential to provide students with opportunities for self-evaluation and reflection, thereby supporting and strengthening the required competencies of reflective practice as outlined by Australian and Midwifery Board of Australia Standards for Practice. A potential strategy, consensus marking of oral viva exams, for postgraduate level nursing students was found to provide an opportunity for students to develop their evaluative judgement. Feedback was explored as a potential avenue to embed the concepts of developing evaluative judgement in undergraduate clinical practice settings. Embedding the concepts of developing evaluative judgement in feedback has potential to enhance current feedback practice by encouraging educators to shift the focus of feedback, from a means to deliver information to students about their performance, to an opportunity for students to develop their evaluative judgement on the quality of their work.

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Appendices

Appendix 2.1 Detailed Search Strategy

Search updated July 2024

Databases	Search terms
CINAHL **ProQuest** **Scopus** **Eric** **MEDLINE** **ScienceGate** **Web of Science**	Student* OR nurs* OR midwi* OR “healthcare professional” OR “allied health” OR “health occupations” OR medic* AND “evaluative judgement” OR “evaluative judgment” AND Higher OR tertiary OR university OR postgraduate OR undergraduate

PCC Framework		**Inclusion criteria:** All published work that included developing students’ evaluative judgement as a concept. **Exclusion criteria:** Non university/higher education settings
Population:	Student	
Concept:	Evaluative judgement	
Context:	University/ tertiary education	

Appendix 2.2 Critical Appraisal Tables 1 - 4

Table 1: Critical appraisal of qualitative studies

Authors	*Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Bearman et al 2022	Y	Y	Y	Y	Y	N	N	Y	Y	Y
Cano Garcia et al 2024	Y	Y	Y	Y	Y	N	N	N	Y	Y
Chen et al 2022	Y	Y	Y	Y	Y	N	N	Y	Y	Y
Chong 2021	Y	Y	Y	Y	Y	N	N	Y	Y	Y
Fischer et al 2024	Y	Y	Y	Y	Y	N	N	Y	Y	Y
McIver and Murphy 2023	Y	Y	Y	Y	Y	N	N	Y	Y	Y
Nicola-Richmond et al 2024	Y	Y	Y	Y	Y	N	N	Y	Y	Y
Tai et al 2016	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
TOTAL	8	8	8	8	8	0	1	7	8	8

* **Q1:** Is there congruity between the stated philosophical perspective and the research methodology? **Q2:** Is there congruity between the research methodology and the research question or objectives? **Q3:** Is there congruity between the research methodology and the methods used to collect data? **Q4:** Is there congruity between the research methodology and the representation and analysis of data? **Q5:** Is there congruity between the research methodology and the interpretation of results? **Q6:** Is there a statement locating the researcher culturally or theoretically? **Q7:** Is the influence of the researcher on the research, and vice-versa, addressed? **Q8**: Are participants, and their voices, adequately represented? **Q9:** Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body? **Q10:** Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data? (Lockwood et al 2015)

Reference

Lockwood, C., Munn, Z., Porritt, K. (2105). Qualitative research synthesis: methodological guidance for systematic reviewers utilizing meta-aggregation. Int J Evid Based Healthc. 13(3):179–187

Table 2: Critical appraisal of quantitative studies

Authors	*Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Fitzgerald et al. 2021	Y	Y	Y	N	N	Y	Y	N/A	Y
Gyamfi et al 2022	Y	Y	Y	N	N	Y	Y	N/A	Y
Ibarra-Saiz et al 2020	Y	N	Y	N	Y	Y	Y	N/A	Y
Ramlogan & Raman 2022	Y	N	Y	Y	Y	Y	Y	N/A	Y
Tai et al 2016	Y	N	Y	Y	N	Y	Y	N/A	Y
TOTAL	5	2	5	2	2	5	5	N/A	5

***Q1:** Is it clear in the study what is the "cause" and what is the "effect" (i.e. there is no confusion about which variable comes first)? **Q2:** Was there a control group? **Q3:** Were participants included in any comparisons similar? **Q4:** Were the participants included in any comparisons receiving similar treatment/care, other than the exposure or intervention of interest? **Q5:** Were there multiple measurements of the outcome, both pre and post the intervention/exposure? **Q6:** Were the outcomes of participants included in any comparisons measured in the same way? **Q7:** Were outcomes measured in a reliable way? **Q8:** Was follow-up complete and if not, were differences between groups in terms of their follow-up adequately described and analysed? **Q9:** Was appropriate statistical analysis used? (Barker et al 2024)

Reference

Barker, TH., Habibi, N., Aromataris, E., Stone, JC., Leonardi-Bee, J., Sears, K., et al. (2024). The revised JBI critical appraisal tool for the assessment of risk of bias quasi-experimental studies. JBI Evid Synth. 22(3):378-88.

Table 3: Critical appraisal of systematic reviews

Authors	*Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
Ilangakoon et al 2022	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y
Rung & George 2021	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
TOTAL	2	2	2	2	2	2	2	2	1	2	2

***Q1:** Is the review questions clearly and explicitly stated? **Q2**: Were the inclusion criteria appropriate for the review question? **Q3**: Was the search strategy appropriate? **Q4**: Were the sources and resources used to search for studies adequate? **Q5:** Were the criteria for appraising studies appropriate? **Q6:** Was critical appraisal conducted by two or more reviewers independently? **Q7:** Were there methods to minimize errors in data extraction? **Q8:** Were the methods used to combine studies appropriate? **Q9:** Was the likelihood of publication bias assessed? **Q10:** Were recommendations for policy and/or practice supported by the reported data? **Q11**: Were the specific directives for new research appropriate? (Aromataris et al 2015)

Reference

Aromataris, E., Fernandez, R., Godfrey, C., Holly, C., Kahlil, H., Tungpunkom, P. (2015). Summarizing systematic reviews: methodological development, conduct and reporting of an Umbrella review approach. Int J Evid Based Healthc. 13(3):132-40.

Table 4: Critical appraisal of expert opinion

Author	*Q1	Q2	Q3	Q4	Q5	Q6
Bearman et al 2024	Y	Y	Y	Y	Y	Y
Bertram & Tomas 2023	Y	N	Y	Y	Y	Y
Bonvin et al 2022	Y	N	Y	Y	Y	Y
Boud et al 2018	Y	Y	Y	Y	Y	Y
Gladovic 2021	Y	N	Y	N	Y	N
Molloy et al 2020	Y	Y	Y	Y	Y	Y
Naidoo et al 2021	Y	N	Y	Y	N	N
Panadero et al 2019	Y	Y	Y	Y	Y	Y
Sadler 2010	Y	Y	Y	Y	Y	Y
Tai et al 2018	Y	Y	Y	Y	Y	Y
TOTAL	10	6	10	9	9	8

***Q1**: Is the source of the opinion clearly identified? **Q2:** Does the source of opinion have standing in the field of expertise? **Q3:** Are the interests of the relevant population the central focus of the opinion? **Q4:** Does the opinion demonstrate a logically defended argument to support the conclusions drawn? **Q5:** Is there reference to the extant literature? **Q6**: Is any incongruence with the literature/sources logically defended? (McArthur et al 2015)

Reference

McArthur, A., Klugarova, J., Yan, H., Florescu, S. (2020). Chapter 4: Systematic reviews of text and opinion. In: Aromataris E, Munn Z (Editors). JBI Manual for Evidence Synthesis. JBI,

Appendix 4.1 Authorship Declaration

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Full Publication Details	Henderson, B., Aitken, R., Lewis, L. K., & Chipchase, L. (2021). Postgraduate nursing students' perceptions of consensus marking with online oral vivas: A qualitative study. Nurse Education Today, 101, 104881–104881. https://doi.org/10.1016/j.nedt.2021.104881
Section of thesis where publication is referred to	Chapter 3 pages 48-72

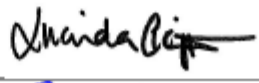
Student's contribution to the publication		
75	%	Research design
85	%	Data collection and analysis
75	%	Writing and editing

Outline your (the student's) contribution to the publication:

Bridget Henderson contributed to the conceptualisation of the research questions and research design with input from the supervisory team. Bridget Henderson conducted the data collection and analysis. The supervisory team provided input into the analysis. Bridget Henderson completed the initial draft of the manuscript. All authors edited multiple revisions of the manuscript.

APPROVALS

By signing the section below, you confirm that the details above are an accurate record of the students contribution to the work.

Name of Co-Author 1	Lucy Lewis	Signed		Date	18/09/2024
Name of Co-Author 2	Lucy Chipchase	Signed		Date	20/09/2024
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Postgraduate nursing students' perceptions of consensus marking with online oral vivas: A qualitative study

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ABSTRACT

Background: Authentic assessment design that fosters self-reflection and evaluation seeks to develop evaluative judgement; a capability required of registered nurses. A new method of grading, known as consensus marking, was introduced to an online oral viva that required post-graduate nursing students to evaluate and reflect on their performance and grade their level of competence in collaboration with the assessor. This study aimed to explore postgraduate nursing students' perceptions about their experience of online oral viva examination and the use of consensus marking.
Design: A qualitative study using retrospective student interviews.
Methods: A retrospective, thematic analysis of open-ended questions from students who had participated in an online viva using consensus marking that was recorded for assessment and quality improvement.
Results: Postgraduate emergency nursing students perceived that the online viva while creating some anxiety was relatable to their workplace and overall, they preferred this assessment method to others. Students perceived that consensus marking enabled self-evaluation and reflection provided an opportunity for beneficial critical reflective discussions, and facilitated a positive shift in the power dynamics between the student and assessor.
Conclusions: The online oral vivas provided an authentic assessment method that, despite causing anxiety, was preferred to written assessment. The students perceived that consensus marking provided an opportunity to reflect and engage in bidirectional feedback dialogue with the assessor in a collegial discussion. Further research is required to evaluate the use of consensus marking in other assessment designs.

1. Introduction

Nurses once qualified and inducted into their profession, are expected to be reflective practitioners capable of making judgements of their performance to maintain and develop clinical skills and knowledge (Chaffey et al., 2012; Delany et al., 2013; McLeod et al., 2020; NMBA, 2016; Taylor, 2006). The capability to make decisions about the quality of the work of oneself and others is known as evaluative judgement (Boud and Soler, 2016). Evaluative judgement is one goal of higher education that develops students and clinicians ability to appraise their work and identify future learning needs (Tai et al., 2018). Providing learning and teaching opportunities that develop post-graduate nursing students' ability to be reflexive practitioners is fundamental to clinical practice and lifelong learning.

2. Background

2.1. Online oral viva

Assessment design is critical to enable students to develop evaluative judgement and other fundamental capabilities, such as self-reflection (Tai et al., 2018). In undergraduate and postgraduate nursing education, authentic assessment tasks provide an opportunity for students to apply academic knowledge to the context of their future or current

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workplace (Chong et al., 2016; Raymond et al., 2013; Wu et al., 2015). The oral viva is believed to be an authentic assessment of deep learning, applying and synthesizing knowledge and high-level clinical reasoning alongside facilitating engagement in academic, professional discourse to explore and challenge the depth and breadth of students' knowledge (Hungerford et al., 2015; Kleiven et al., 2016; Pearce and Lee, 2009; Shenwai and Patil, 2013; Sutherland et al., 2019).

Using the oral viva as an authentic assessment method in an online forum is under-researched and the benefits and limitations in the online environment are still evolving. Only three studies have explored the use of oral vivas in fully online courses (Akimov and Malin, 2020; Okada et al., 2019; Sotiriadou et al., 2020). These studies demonstrated that online oral vivas improved communication skills and safeguarded against academic integrity breaches (Akimov and Malin, 2020; Okada et al., 2019; Sotiriadou et al., 2020). Also, students enjoyed engaging in this type of assessment as they perceived it provided an opportunity to showcase their knowledge and, while the assessment was reported to create some anxiety, students believed it was an appropriate assessment method (Akimov and Malin, 2020). While these studies speak to the value of oral online vivas, less attention has been paid to the way that these assessments are graded, particularly as a potential means to develop capabilities, such as self-reflection and evaluation.

Commonly, in assessment grading, students are the passive recipients of feedback with grades being bestowed on them by an 'expert judge' (Molloy and Denniston, 2019; Sadler, 2010). For example, Delany and Molloy (2009) reported that, even in clinical education, learner contribution in feedback conversations was less than 5% with scarce opportunities for learners to express their own perspectives on performance. Academic or external judgement of student performance appears to permeate most assessment methods, including authentic assessment (McGaghie et al., 2020; Oermann, 2014). In nursing, it could be argued that the prevalence of summative assessment and traditional assessor judgement of performance stifles the development of students' critical thinking and self-evaluation skills (Siles-González and Solano-Ruiz, 2016). Indeed, underdeveloped methods of providing self-evaluation opportunities in higher education have resulted in studies that report self-evaluation by students to be inaccurate and ineffective (Baxter and Norman, 2011; Davis et al., 2006; Gadbury-Amyot et al., 2015; Jackson, 2014). Maintaining the status quo whereby experts pass judgement on health professional students, and continuing to reinforce student dependency on receiving feedback, creates disparity with the working world where graduates are expected to make evaluative judgements on their own work and identify knowledge deficits (Boud et al., 2018).

One potential method to promote student independence is self-assessment. Self-assessment involves students appraising their own work but generally has not included discussion on the quality of the students' ability to self-reflect (Tai et al., 2018). A richer method, known as consensus marking, was created to build on self-assessment and requires that the student self-evaluate their performance with both the assessor and student engaging in a reflective conversation about competent performance (Thompson et al., 2017).

2.2. Consensus marking

Consensus marking requires students to reflect and evaluate their performance against the outlined criteria. Before the assessor passes judgement on the student's capability, both parties engage in a critical reflective discussion where consensus is reached about the student's perception of their competency. Competency is a term used to encompass the qualities of expertise, aptitude, and proficiency. Consensus marking is believed to promote reflexive practice, to build self-reliant practitioners who can identify their learning needs while also giving students a voice during the grading process (Thompson et al., 2015).

To date, only one published study has evaluated consensus marking. The study explored perceptions about consensus marking from a cohort of undergraduate paramedicine students during face-to-face oral viva assessments (Thompson et al., 2017). Students (n = 90) in this study perceived consensus marking to be fair, effective for learning, while also facilitating critical analysis of their own practice (Thompson et al., 2017). To date, the use of consensus marking has not been examined in other health professions including nursing, in an online medium, or a postgraduate cohort of students.

3. Methods

3.1. Aims

This study aimed to explore postgraduate nursing students' perceptions about their experience of online oral viva examinations and the use of consensus marking.

3.2. Design

This qualitative study used pre-existing data collected for quality assurance and improvement from a postgraduate emergency nursing unit of study at one university. At the end of the oral viva after the students had completed the consensus marking and had been allocated their final grade, all students were asked two open-ended questions:

1. What did you think about the oral viva as an assessment method and how does it relate to your learning goals?
2. What do you think about the consensus marking as a method of grading the oral viva?

3.3. Participants

Video recordings were collected as part of a routine university assessment for this cohort. As part of the examination process, the assessment and the responses to the two open-ended questions were audio-recorded and stored in an online learning management system. Permission was sought from the students retrospectively to use the stored data so that the recordings were able to be analysed. All students were contacted with 13 of the 50 students (26%) enrolled in the unit of study providing consent (M:F 2:11).

3.4. Online viva and consensus marking approach

The online oral viva was a summative assessment item at the end of a capstone emergency nursing unit of study. The viva was worth 35% of the final grade. Each student was randomly allocated one of three scenarios (Fig. 1). The oral viva was delivered through an online video conferencing system (Blackboard Collaborate©) and recorded for moderation purposes. The oral viva exam required students to demonstrate a deep understanding of pathophysiology, pharmacology, clinical and diagnostic reasoning as the patient condition in the scenario deteriorated. The oral viva exam took approximately 45-min and consensus marking, took approximately 15 min after the viva exam.

The marking rubric (Fig. 2) was split into two parts, each contributing 50% of the final grade. Part A of the rubric was a traditional tutor judgement of the student's overall performance against the described criteria. Part B involved the students engaging in self-evaluation and a critical feedback discussion with the assessor to calibrate their understanding of their level of competence and their achievement of the desired standards outlined in the criteria. Both parties engaged in a critical reflective conversation and bidirectional feedback about each of the identified criteria in part B. During this discussion, a student may identify errors or lack of knowledge and had an opportunity to rectify errors at this time.

The student evaluated their performance against the criteria in part B before the assessor provided any judgement or grade to the student.

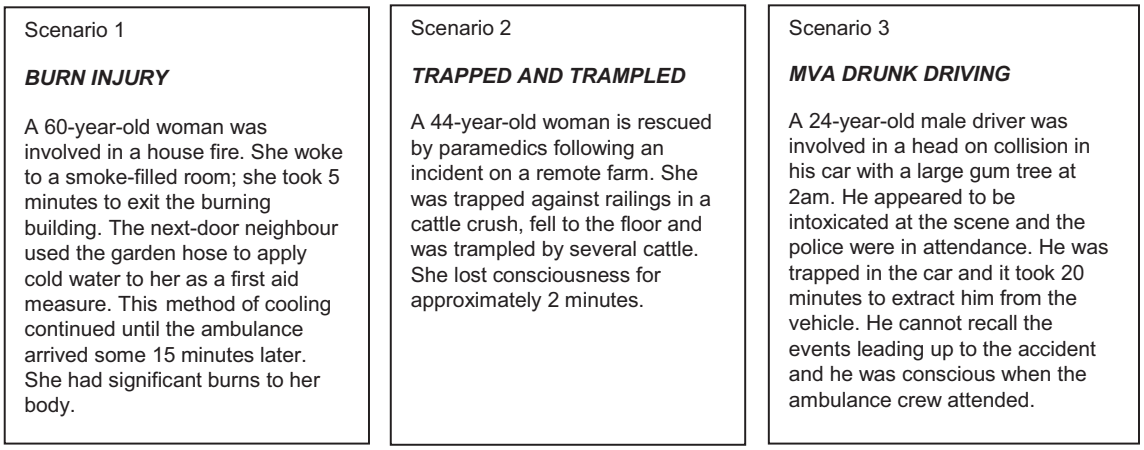

Fig. 1. Case based scenarios used for the online oral viva.

3.5. Data collection

Consenting students' recordings were extracted and transcribed verbatim. A thematic analysis of the transcribed data was conducted to explore meaning from the student experience. Data analysis involved initial coding to identify patterns and concepts from the data. Focused coding then occurred to identify themes. Coding and identifying themes were completed using both a manual coding method and NVivo© computer software. To achieve rigor and validity during the analysis process, peer debriefing was conducted by the research team that included nursing and non-nursing professionals. In addition, the primary researcher maintained field notes and a reflective journal to highlight any personal biases or potential issues that might have influenced the data analysis. Regular reflexive discussions also occurred with the research team during the data collection and analysis phase to ensure the trustworthiness of the resulting patterns, concepts, and themes (Morse, 2015).

3.6. Data analysis

Thematic analysis using a six-stage approach as described by Braun and Clarke (2006) provided an iterative and flexible framework to facilitate comprehensive scrutiny of the data. A reflexive approach to analysing the data generated initial codes. As cohesive, meaningful patterns were identified these were inductively conceptualised into themes (Braun and Clarke, 2006). Rather than applying an a priori theory, the researchers used comparison as an iterative cyclical process to revise the codes, and by connecting relationships within and between the codes, themes were identified (Bowen, 2008; Morse et al., 2002). Dependability was achieved by having two members of the research team independently review the transcribed data to validate the codes and themes (Creswell, 2018).

3.7. Ethical considerations

Ethical approval was provided by the University Social and Behavioural Research Ethics Committee (SBREC) (approval no. 8554). Written informed consent was gained from all participants.

4. Results

4.1. Student perceptions of an online oral viva exam

The transcribed data, on the students' perceptions of the oral viva and its relationship to their learning goals, was initially categorised into 5 codes. 1) Looking for tutor judgement, 2) negative thoughts, 3) positive thoughts, 4) relates to the real world and 5) ways of learning. Three themes emerged from the codes:

4.1.1. Anxiety

Eight of the 13 participants (62%) expressed anxiety at the concept of engaging in an oral viva exam. This is demonstrated by the following quote:

> "*My initial thoughts on the oral viva when I found out it was going to be an oral viva was not looking forward to it. It is so in your face so on the spot… I started off, well a bit worried about it*".
>
> (P15)

4.1.2. Relates to real work-life experiences

Six of the 13 participants (46%) expressed how the oral viva exam reflects what they do in the clinical setting. The following quotes highlight that their experiences were reflective of the clinical setting:

> "*It is a good way to sit there and talk to yourself and for you to ask questions occasionally we are used to that at work as well. The fact that the course that we are doing is emergency nursing and its all resuscitation based you should have a systematic approach to go through this is a good way to basically make sure that we have that understanding*".
>
> (P 39)

> "*I think it is good it puts everything together you can practice putting it into the clinical space*".
>
> (P 5)

> "*It helps you hone those skills that we have learnt throughout this course… and apply them in that situation…this is more truer to how it will be ultimately, thinking on your feet*".
>
> (P 42)

4.1.3. Preferred assessment method

Eleven of the 13 participants (85%) expressed a preference for the oral viva as an assessment method rather than a written assignment.

> "*I love simulations, I love being able to defend my knowledge… I could focus on learning when I was studying instead of referencing. Written assignments are getting a little bit old so this is really refreshing as a different way of assessment*".
>
> (P 41)

Student's Name Student ID

PART A TUTOR JUDGEMENT		
Grade		/5
5	Safe, competent, practice demonstrated	
4	Minor improvements needed	
3	Multiple areas for improvement	
2	Unsatisfactory performance – limited understanding	
1	Lack of knowledge demonstrated could lead to patient harm	
0	Critical errors that would result in patient harm	

PART B CONSENSUS MARKING		
PRIMARY SURVEY & EARLY INTERVENTION	Student	Teacher
	Not Competent	Not Competent
	Consensus on competent	/ 1
ABILITY TO INTERPRET DIAGNOSTICS	Student	Teacher
	Competent	Competent
	Consensus on competent	/ 1
CLINICAL JUDGEMENT & MANAGEMENT OF THE SCENARIO	Student	Teacher
	Competent	Competent
	Consensus on competent	/ 1
SECONDARY SURVEY & APPROPRIATE INTERVENTIONS	Student	Teacher
	Competent	Competent
	Consensus on competent	/ 1
POST RESUSCITATION CARE	Student	Teacher
	Competent	Competent
	Consensus on competent	/ 1
Consensus Score	**/5**	
TOTAL SCORE		**/10**

Fig. 2. Oral viva consensus marking rubric.

"*Thinking out loud…allowed me…to be able to get all my points across… the oral viva allows consolidation of knowledge*".

(P 43)

"*I have been working in ED for a long time and I feel like I do know my stuff and that I do better in this kind of situation where I can talk through stuff as opposed to academic expression*".

(P 46)

4.2. Student perceptions of consensus marking as a grading method

The transcribed data on students' perception about consensus marking was initially categorised into eight codes, 1) a positive experience, 2) fair method. 3) having a voice. 4) identifying weaknesses, 5) instant feedback, 6) looking for tutor judgement, 7) perceived inability to self-evaluate, 8) ability to self-evaluate and reflect on practice. Three themes emerged from the codes:

4.2.1. Enabling reflection and self-evaluation

Ten of the 13 participants (77%) mentioned that they liked how they were given the opportunity to reflect on what they had done, evaluate their performance and identify errors and correct them without penalty.

"*It forces a reflection on how you have done. I have not really done a reflection like that with any other assignment, quite in depth*".

(P 41)

"*I like the opportunity to reflect on what we have done…. It is not always something we do. When we are reflecting on how we personally feel we have gone in a situation that is where we do identify our weaknesses*".

(P 15)

4.2.2. Beneficial critical reflective conversations

Eight of the 13 participants (62%) expressed that engaging in conversation with the assessor and reflecting on performance created an opportunity to gain valuable feedback and assisted them to identify where they demonstrated knowledge and skill and where they could improve.

"*My weaknesses were probably a little better established to me and having someone agree with me when I say those weaknesses is actually really refreshing because often they get downplayed or … not acknowledged when you express them to a colleague*".

(P 41)

"*I like the instant feedback…your post learning you sort of know straight away where some of your weaknesses are… where some of your strengths are just reinforces the things that we already do feel confident in. It is good to hear that feedback. We have more guidance on where we need to put more focus and education*".

(P 15)

4.2.3. Positive dynamic

Seven of the 13 participants (54%) expressed a feeling that the critical reflective conversation with the assessor was on equal terms. They could discuss how they felt they performed and could work out where their knowledge deficits were through collegial dialogue with the assessor.

"*It is good because I can hear where you are coming from and you can hear where I am coming from so… it gives a chance to sort of hash out, sort of say, ok yeah I see that…. It gives you a chance to voice your opinion*"

(P 2)

"*Sometimes you get a result that you think, well I did that properly, but someone else has the opinion that no they don't, so that this way you and I can actually talk about it, so I can tell you what I think I did well and you can tell me what you think I did well or if I needed extra learning in something you could tell me*".

(P 39)

5. Discussion

This qualitative study explored postgraduate emergency nursing students' perceptions of an online oral viva assessment, and the use of consensus marking. Students perceived that while the online viva created some anxiety, the assessment was congruent with learning in the workplace. Further, students perceived that consensus marking enabled self-evaluation and reflection, allowing beneficial critical reflective discussions while creating a positive dynamic between the student and assessor. Thus, this form of self-assessment, in conjunction with critical feedback from the assessor, appeared to enable the development of evaluative judgement, a necessary goal of higher education, that enables students to improve their work and to meet their future learning needs (Tai et al., 2018).

Students enjoyed the dynamic and challenging nature of the case-based oral viva and preferred this assessment method to written assessment despite the anxiety created. This finding is consistent with the literature with student reported anxiety being strongly associated with oral viva assessments (Carter, 2012; Furnham et al., 2008; Huxham et al., 2012; Kleiven et al., 2016; Pearce and Lee, 2009). The stress response to oral examinations has the potential to interfere with working memory and ability to recall information (Ringeisen et al., 2019). However, anxiety levels are driven in part by the unknown. For example, students entered into the assessment process with uncertainty around the nature of the questions and despite preparing based on the key assessment information provided, there may have been doubts around their own preparedness, fear of failure and ability to perform (Hungerford et al., 2015; Joseph et al., 2019). While anxiety may affect performance, studies also suggest that learners understand that being taken out of their comfort zone is valuable for learning, even when this is perceived as unpleasant at the time (Leahy et al., 2020). Indeed, it could be argued that in postgraduate emergency department nursing, an ability to work under pressure, and manage anxiety, is critical to responsive decision making and providing appropriate interventions when patient outcomes are time-critical (Groombridge et al., 2019).

Creating authentic assessment is dependent upon the assessment being relevant to students' workplace experiences and that students understand the value of learning the curricular content and assessable learning outcomes (Benner, 2012; Bosco and Ferns, 2014; Villarroel et al., 2018). The online oral viva exam attempted to replicate trauma scenarios common to emergency departments that students are expected to manage. The online oral viva assessment method provided a forum for students to focus their learning and showcase their knowledge. In this study, students enjoyed defending their knowledge and experiences, while engaging in professional discourse that allowed them to focus on learning clinically relevant skills rather than focusing on academic writing. These findings support the concept that authentic assessment should be realistic, challenge higher order thinking and facilitate opportunities for students to judge their own performance (Raymond et al., 2013; Tai et al., 2018; Villarroel et al., 2018).

The oral viva exam, while providing realism and cognitive challenge, generally does not provide students with the opportunity to judge their own performance when combined with traditional assessor judgement. However, students perceived that consensus marking enabled reflection and self-evaluation with beneficial critical reflective conversations with their assessor. The two-way feedback dialogue enhanced students' learning experiences as they were actively engaged in the reflective feedback discussion. This finding is consistent with literature describing that bidirectional feedback dialogue creates an environment where students engage in the feedback process that supports them in calibrating their performance against the desired criteria (Boud and Molloy, 2013; Gamlem and Smith, 2013; Hattie and Timperley, 2007; Sadler, 2010; Tan et al., 2019; Yang and Carless, 2013). Moreover, the critical reflective conversations with the assessor may have enabled reflection beyond-action by facilitating students to make sense of, and learn from, the experience (Edwards, 2017). In this study, nursing students were

able to identify where they lacked knowledge and where they could improve through a collegial discussion with the assessor.

The nursing students noted that they had input into the feedback dialogue and engaged in a democratic collegial discussion that supported them to identify their future learning needs; suggesting a positive dynamic between student and assessor. This dynamic could be argued to result in a more level playing field whereby the students were free to debate, request more feedback and rationalise any discrepancy in their perception on performance. Such an opportunity is a move away from the traditional authoritarian role of assessor grading and unilateral feedback that forces students to be passive recipients of judgement on their performance and maybe more reflective of learning in the workplace.

This is the first study to explore student perceptions of an online viva with consensus marking in postgraduate nursing education with several methodological strengths. Firstly, the participant recruitment and qualitative analyses were completed retrospectively on pre-existing data eliminating possible bias in student responses to the open-ended questions. Secondly, the qualitative analyses were completed by two members of the research team, with cross-checking of themes and results with the rest of the team, ensuring rigor in the process and findings. Finally, the same assessor was used for all online viva and consensus marking assessments, allowing for consistency between participants and methods of data collection.

5.1. Limitations

The study also has limitations. First, the sample size was small, and the questions asked were simple and open-ended. However, the codes that emerged generated an understanding of the students' perceptions and the themes illuminated clear meaning from the data collected. Second, the findings provided a perspective from one cohort of postgraduate students at one tertiary institution and may not be generalisable to other health professional students or institutions. Finally, this study sought student perspectives that may contain unqualified assumptions about assessment and grading methods.

5.2. Implications

The findings suggest that postgraduate nursing students support the online oral viva as an authentic assessment method despite the anxiety created. The students enjoyed the critical reflective conversation and instant feedback that consensus marking provided, and that their thoughts and opinions about their performance were discussed without fear of penalty. Based on these findings, educators might consider relinquishing the traditional assessor judgement in favour of a more democratic approach to summative grading. However, more empirical evidence is needed to compare consensus marking to traditional tutor judgement. Further work is needed to explore if there are differences created by the grading method in the relationship between student and assessor and if that relationship impacts anxiety levels when performing an oral viva. While this study focused on the emerging educational philosophy of evaluative judgement, further research could explore whether different learning styles impact students' perception of consensus marking, their level of satisfaction with self-evaluation, and if any benefits are carried over into the workplace on graduation. In addition, further studies could explore other assessors/lecturers perceptions of consensus marking and its use in other disciplines would add to the discourse of consensus marking as a grading method.

6. Conclusion

A desired outcome of nursing postgraduate assessment is to provide students with the skills and knowledge required for their future professional career. A skill set that is highly regarded is the ability to self-regulate learning and critically reflect on clinical practice. A case-based online oral viva provided an authentic assessment method that created a synchronous interaction with online students simulating realistic emergency presentations. Authentic assessment benefits from a grading method that supports the concept of developing evaluative judgement through self-assessment. Consensus marking nurtured students' ability to reflect and engage in critical dialogue with the assessor and appeared to support the development of self-reflection and evaluation. Using consensus marking to grade online oral vivas promotes engagement in professional discourse, where students reflect on performance, self-evaluate and identify their strengths and weaknesses to inform future learning needs. This study suggests that the online oral viva using consensus marking is an assessment and grading method that provides an opportunity for students to develop their evaluative judgement.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have influenced the work reported in this paper.

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Appendix 4.4 Mapping categories and initial codes to the final themes and examples of theme development

Categories and initial codes to the final themes - Online oral viva

Examples of categories: Perceptions of the online viva exam	Initial themes independently coded	Final themes
Its terrifying / on the spot Nervous/ nerve wrecking Worried Really hard Don't know what to expect What does the tutor want from me	Looking for tutor judgement Negative thoughts	Anxiety
Defend your knowledge Its what we do in real life It relates to what we do in ED Hones the skills and you can apply them	Relates to the real world	Relates to real work-life experiences
I know my stuff I like this method better than academic stuff I love defending my knowledge Written assignment are getting a little old this is refreshing A nice way to be assessed I can consolidate my learning I have to think better than tedious writing I have learned the most and have been challenged Forces you to critically think you don't have all the information it's the best way of learning It puts everything I learned together	Ways of learning Positive thoughts	Preferred assessment method

Categories and initial codes to the final themes - Consensus marking

Examples of categories: Perceptions of consensus marking as a grading method	Initial themes independently coded	Final themes
Makes you think	Ability to self-evaluate and reflect on practice	Enabling reflection and self-evaluation
Helps you identify mistakes		
Forces reflection		
Reflecting is important	Identifying weaknesses	
Forces me to look back see what I did wrong		
Helps me identify weaknesses and strengths		
Great to have feedback straight away	Instant feedback	Beneficial critical reflective conversations
You can talk about your performance with the tutor		
Post learning		
Instant feedback	Looking for tutor judgement	
More guidance from the tutor		
Learning through communication		
Working through with the tutor		
You can have input	Perceived inability to self-evaluate	Positive dynamic
It is nice to talk it through		
Extra learning about what I did well and where I could improve		
A chance to voice an opinion	Fair method	
Working out where you stand		
Immediate assistance to know if you are right or wrong sort of hash it out	Positive experience	
	Having a voice	
Sometimes the result is not what you think but you can talk about it		

Example of theme development

Final theme	Definitions	Descriptions	Example
Preferred assessment method	Positive expressions about the oral viva exam experience	Mention of concepts relating to the oral viva. Mention of concepts suggesting that the oral viva is preferred to other assessment methods	"Thinking out loud…allowed me…to be able to get all my points across…the oral viva allows consolidation of knowledge".
Beneficial critical reflective conversations	Expressions of engaging in the feedback discussion	Mention of the feedback discussion at the conclusion of the oral viva exam. Mention of the benefits of the feedback discussion at the end of the oral viva	"My weaknesses were probably a little better established to me and having someone agree with me when I say those weaknesses is actually really refreshing because often they get downplayed or … not acknowledged when you express them to a colleague".

Appendix 4.5 Ethics Approval

From: Human Research Ethics <human.researchethics@flinders.edu.au>
Sent: Tuesday, 11 February 2020 9:31 AM
To: Bridget Henderson <bridget.henderson@flinders.edu.au>; Lucy Lewis <lucy.lewis@flinders.edu.au>; Lucy Chipchase <lucy.chipchase@flinders.edu.au>; Robyn Aitken <robyn.aitken@flinders.edu.au>
Subject: 8554 ETHICS approval notice (11 February 2020)
Importance: High

Dear Bridget,

Your conditional approval response for project 8554 was reviewed by the Deputy Chair of the Social and Behavioural Research Ethics Committee (SBREC) and was **approved.** The ethics approval notice can be found below.

APPROVAL NOTICE

Project No.:	**8554**
Project Title:	A retrospective analysis of postgraduate emergency nursing student perceptions of consensus marking of online videostreamed oral vivas.
Principal Researcher:	Mrs Bridget Henderson
Email:	bridget.henderson@flinders.edu.au
Approval Date:	11 February 2020
Ethics Approval Expiry Date:	**31 December 2024**

The above proposed project has been **approved** on the basis of the information contained in the application, its attachments and the information subsequently provided with the addition of the following comments.

Additional comments:

Please ensure that copies of the correspondence granting permission to conduct the research from Dean, Teaching & Learning, College of Nursing & Health Sciences are submitted to the Committee *on receipt.* Please ensure that the SBREC project number is included in the subject line of any permission emails forwarded to the Committee. Please note that data collection should not commence until the researcher has received the relevant permissions (item D8 and Conditional approval response – number 5)

RESPONSIBILITIES OF RESEARCHERS AND SUPERVISORS

1. **Participant Documentation**
   Please note that it is the responsibility of researchers and supervisors, in the case of student projects, to ensure that:

- all participant documents are checked for spelling, grammatical, numbering and formatting errors. The Sub-Committee does not accept any responsibility for the above mentioned errors.
- the Flinders University logo is included on all participant documentation (e.g., letters of Introduction, information Sheets, consent forms, debriefing information and questionnaires – with the exception of purchased research tools) and the current Flinders University letterhead is included in the header of all letters of introduction. The Flinders University international logo/letterhead should be used and documentation should contain international dialling codes for all telephone and fax numbers listed for all research to be conducted overseas.
- the SBREC contact details, listed below, are included in the footer of all letters of introduction and information sheets.

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 ethics 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.

2. Annual Progress / Final Reports

In order to comply with the monitoring requirements of the *National Statement on Ethical Conduct in Human Research 2007 (updated 2018)* an annual progress report must be submitted each year on the **11 February** (approval anniversary date) for the duration of the ethics approval using the report template available from the Managing Your Ethics Approval web page.

Please note that no data collection can be undertaken after the ethics approval expiry date listed at the top of this notice. If data is collected after expiry, it will not be covered in terms of ethics. It is the responsibility of the researcher to ensure that annual progress reports are submitted on time; and that no data is collected after ethics has expired.

If the project is completed *before* ethics approval has expired please ensure a final report is submitted immediately. If ethics approval for your project expires please either submit (1) a final report; or (2) an extension of time request (using the modification request form).

First Report due date:	**11 February 2021**
Final Report due date:	**31 December 2024**

Student Projects
For student projects, the SBREC recommends that current ethics approval is maintained until a student's thesis has been submitted, assessed and finalised. This is to protect the student in the event that reviewers recommend that additional data be collected from participants.

3. Modifications to Project

Modifications to the project must not proceed until approval has been obtained from the Ethics Committee. Such proposed changes / modifications include:

- change of project title;
- change to research team (e.g., additions, removals, researchers and supervisors)
- changes to research objectives;
- changes to research protocol;
- changes to participant recruitment methods;
- changes / additions to source(s) of participants;
- changes of procedures used to seek informed consent;

- changes to reimbursements provided to participants;
- changes to information / documents to be given to potential participants;
- changes to research tools (e.g., survey, interview questions, focus group questions etc);
- extensions of time (i.e. to extend the period of ethics approval past current expiry date).

To notify the Sub-Committee of any proposed modifications to the project please submit a Modification Request Form available from the Managing Your Ethics Approval SBREC web page. Download the form from the website every time a new modification request is submitted to ensure that the most recent form is used. Please note that extension of time requests should be submitted prior to the Ethics Approval Expiry Date listed on this notice.

Change of Contact Details
If the contact details of researchers, listed in the approved application, change please notify the Sub-Committee so that the details can be updated in our system. A modification request is not required to change your contact details; but would be if a new researcher needs to be added on to the research / supervisory team.

4. Adverse Events and/or Complaints

Researchers should advise the Executive Officer of the Ethics Committee on 08 8201-3116 or human.researchethics@flinders.edu.au immediately if:

- any complaints regarding the research are received;
- a serious or unexpected adverse event occurs that effects participants;
- an unforeseen event occurs that may affect the ethical acceptability of the project.

Kind regards
Rae

Andrea Mather and Rae Tyler
Human Research Ethics Officers (Social and Behavioural Research Ethics Committee)
Research Development and Support

Union Basement Building
Flinders University
Sturt Road, Bedford Park, South Australia, 5042
GPO Box 2100, Adelaide, South Australia, 5001

P: +61 8 8201 3116 (Andrea) | Monday - Friday
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www.flinders.edu.au/research/researcher-support/

Flinders UNIVERSITY
Research Development and Support

Proactively supporting our Research

Appendix 4.6 Consent Form

CONSENT FORM

A retrospective analysis of postgraduate emergency nursing student perceptions of consensus marking of online video streamed oral viva's.

This means you can say NO

RESEARCHERS: Bridget Henderson, Dr Lucy Lewis, Dr Don Houston, Professor Lucy Chipchase, Associate Professor Robyn Aitken,

I have read the Participant Information Sheet and understand all of the information describing this study including that:

- the research is about what I think about oral vivas and consensus marking of online video streamed oral viva'
- the researchers are asking for my permission to access the audio recording of my responses to the two questions that were asked at the conclusion of my oral viva examination that I did in NURS8752 Emergency Nursing Practice, in semester two 2019.
  The questions were:
  - *What did you think about the oral viva as an assessment method and how does it relate to your learning goals?"*
  - *What do you think about the consensus marking as a method of grading the oral viva?*
- the researchers are asking my permission to note my gender and my grade for the oral viva, all of the information collected will not be identifiable, no one will know what gender I am or what grade I received or what my responses to the questions were, as a result of this research
- my participation is anonymous, and information can no longer be identified, preventing anyone identifying my responses and preventing retrieval from the survey database
- I don't have to give a reason if I choose not to participate
- participating, or deciding not to participate at any time will not affect me in anyway, nor will it affect my current or future enrolment in any courses offered by Flinders University.
- there is no direct benefit to me personally as a participant, but that by participating I might contribute to improving the way in which students are assessed in online oral vivas
- the researchers are the only people who have access to the recorded audio data, which will be de-identified and stored in password protected computer files or locked up until it is destroyed
- while information gained during the study may be published, I will not be identified

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee (Project number 8554) 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

If you agree to participate, a copy of this form is available to download for you to keep

- ○ I agree to take part in this research and allow the researchers access to my recorded responses to questions asked at the end of my oral viva. By clicking here, I am giving my consent to participate
- ○ I do not agree to the researchers accessing my recorded responses to the questions asked at the end of my oral viva.

Appendix 4.7 Participant Information

INFORMATION SHEET FOR PARTICIPATION IN RESEARCH

Title: A retrospective analysis of postgraduate emergency nursing student perceptions of consensus marking of online video streamed oral viva's.

Investigator:

Bridget Henderson PhD
Candidate. Associate Lecturer
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College of Nursing & Health Sciences

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Description

The aim of this project is to understand postgraduate emergency nursing students' perception of their experience of undertaking an oral viva examination using consensus marking. The purpose is to implement and evaluate the use of a new method of postgraduate assessment for emergency nurses, who are performing an online oral viva examination.

If I consent to allow access to my recorded responses, what do I have to do?

There is nothing you have to do for this research project. If you consent to allowing the researcher access to your recorded responses to the two questions asked for quality assurance and ongoing improvement to the emergency nursing course at the conclusion of your oral viva, the researcher Bridget Henderson, will de-identify your responses and use your feedback to assist in designing and evaluating a new method of assessment for online oral vivas.

How this project benefits you and future students

The sharing of your feedback will help in the development, implementation and evaluation of a new method of assessing oral vivas in the online medium.

Withdrawal

You can withdraw your consent to access and use your pre-recorded responses at any time.

Are there any risks if I am involved?

No risks or discomforts are anticipated with your participation in this project. However, if you have any concerns regarding actual or potential risks or discomforts, please inform the supervisors of this project or the ethics committee. Should you require counselling support during or after participating in this project please contact Lifeline on 13 11 14 a free of charge 24-hour service. If you are a University student you can also contact your Universities student support services.

Findings of the research

You will be offered the opportunity, if you wish, to review and make comment on the analysis of your electronic videorecording. At the conclusion of the research project an email will be sent to your via your flinders university email account summarising the research findings.

How do I participate?

Participation is entirely voluntary. A consent form will need to be signed prior to commencing. If you wish to allow access to your recorded responses to the quality assurance questions at the conclusion of your oral viva for NURS8752 then please click on the link in the email to access the electronic consent form. If you require additional information please feel free to email Bridget at bridget.henderson@flinders.edu.au or contact her via phone 08 8201 3254.

Thank you for reading this information sheet and we hope you will accept our invitation to be involved in this research project.

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee (Project number 8554) For more information regarding ethical approval of the project the Executive Officer of the Committee

Appendix 5.1 Authorship Declaration

Office of Graduate Research
Room 003, Registry Building
Bedford Park, SA 5042
GPO Box 2100, Adelaide 5001 Australia
Email: hdrexams@flinders.edu.au
Phone: (08) 8201 3854
Website: https://students.flinders.edu.au/my-course/hdr
CRICOS Provider: 00114A

CO-AUTHORSHIP APPROVALS FOR HDR THESIS FOR EXAMINATIONS

In accordance with Clause 5, 7 and 8 in the HDR Thesis Rules, a student must sign a declaration that the thesis does not contain any material previously published or written by another person except where due reference is made in the text or footnotes. There can be no exception to this rule.

a. Publications or significant sections of publications (whether accepted, submitted or in manuscript form) arising out of work conducted during candidature may be included in the body of the thesis, or submitted as additional evidence as an appendix, on the following conditions:
   I. they contribute to the overall theme of the work, are conceptually linked to the chapters before and after, and follow a logical sequence
   II. they are formatted in the same way as the other chapters (i.e. not presented as reprints unless as an appendix), whether included as separate chapters or integrated into chapters
   III. they are in the same typeface as the rest of the thesis (except for reprints included as an appendix)
   IV. published and unpublished sections of a chapter are clearly differentiated with appropriate referencing or footnotes, and
   V. unnecessary repetition in the general introduction and conclusion, and the introductions and conclusions of each published chapter, is avoided.

b. Multi-author papers may be included within a thesis, provided:
   I. the student is the primary author
   II. there is a clear statement in prose for each publication at the front of each chapter, recording the percentage contribution of each author to the paper, from conceptualisation to realisation and documentation.
   III. The publication adheres to Flinders Research Publication, Authorship and Peer Review Policy, and
   IV. each of the other authors provides permission for use of their work to be included in the thesis on the form below.

c. Papers where the student is not the primary author may be included within a thesis if a clear justification for the paper's inclusion is provided, including the circumstances relating to production of the paper and the student's position in the list of authors. However, it is preferable to include such papers as appendices, rather than in the main body of the thesis.

STUDENT DETAILS

Student Name	Bridget Henderson
Student ID	2082153
College	College of Nursing & Health Sciences
Degree	PhD
Title of Thesis	Developing nursing students' evaluative judgement: exploring the pedagogical concept in nursing education

CO-AUTHORSHIP APPROVALS FOR HDR THESIS EXAMINATION

PUBLICATION 2

This section is to be completed by the student and co-authors. If there are more than four co-authors (student plus 3 others), only the three co-authors with the most significant contributions are required to sign below.

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75	%	Research design
75	%	Data collection and analysis
75	%	Writing and editing

Outline your (the student's) contribution to the publication:

Bridget Henderson contributed to the conceptualisation of the research questions and research design with input from the supervisory team. As per the ethics requirements the supervisory team conducted the interviews. Bridget Henderson conducted the data analysis with input from the supervisory team. Bridget Henderson completed the initial draft of the manuscript. All authors edited multiple revisions of the manuscript.

APPROVALS

By signing the section below, you confirm that the details above are an accurate record of the students contribution to the work.

Name of Co-Author 1 Lucy Lewis Signed  Date 18/09/2024

Name of Co-Author 2 Lucy Chipchase Signed  Date 20/09/2024

Name of Co-Author 3 Robyn Aitken Signed  Date 26/09/2024

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Appendix 5.3

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Consensus marking as a grading method for the development of evaluative judgement: Comparing assessor and students

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ABSTRACT

Aim: This study explored postgraduate nursing students' perceptions, anxiety and satisfaction of an innovative and novel grading method for online vivas, consensus marking, compared with traditional assessor judgement.
Background: Reflection, self-evaluation and feedback conversations have the potential to develop nursing students' evaluative judgement. Consensus marking is a novel method of grading students' performance that supports students to reflect, self-evaluate and grade their own work. Active engagement in a feedback dialogue supports students to calibrate their self-evaluation to the required standard in a grade negotiation. Through this approach, students are supported to develop evaluative judgement and lifelong learning skills.
Design: A convergent mixed-methods parallel research design was used.
Methods: Students enrolled in a postgraduate emergency nursing unit of study completed two online viva assessments. One viva was graded using traditional assessor judgement and the other used consensus marking, involving a two-way feedback dialogue, where students had an opportunity to actively engage in grading their own work with the assessor. Student perceptions of each grading method were explored through semi-structured interviews. Interview data were analysed thematically using a six-stage approach. Student anxiety and satisfaction were measured pre- and post each viva using valid and reliable questionnaires. Non-parametric analyses explored differences in anxiety and satisfaction between the two grading methods. Alpha was set at 0.05.
Results: Forty-six participants had complete data for anxiety and satisfaction across both test occasions (82%) and were included in the analysis. Of these, 13 students participated in follow up interviews. Students perceived that the ability to self-evaluate performance and discuss their grade with the assessor using consensus marking was less hierarchical and similar to a collegial debrief. Student anxiety was significantly lower prior to consensus marking compared with the assessor judged viva ($p < 0.001$). Students were significantly more satisfied with consensus marking compared with assessor judgement ($p < 0.01$).
Conclusions: Consensus marking created an opportunity for students to identify knowledge deficits through reflection and self-evaluation of their own performance prior to external judgement. Students were more satisfied and less anxious with the consensus marking grading method compared with traditional assessor judgement. These findings have implications for the development and application of new grading methods in nursing education to facilitate the development of evaluative judgement.

1. Background

Evaluative judgement has been defined as *"the capability to make decisions about the quality of work of self and others"* (Tai et al., 2018, p.5). This capability is vital for nurses who must be able to judge the safety and quality of their own and others' clinical practice (Cathro, 2016; Vaismoradi et al., 2020). Making decisions about the quality of clinical practice, using reflection and self-evaluation, is important for

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emergency nurses who function in a demanding, intense and often unpredictable clinical setting where a close relationship between nurse'' clinical competency and quality of care has been identified (Aghaie et al., 2021; Weigl and Schneider, 2017). Thus, the challenge for higher education is to equip postgraduate nursing students with skills that supports their learning beyond the completion of the course so they have the ability to reflect and self-evaluate their own performance (Boud and Falchickov, 2006; Boud and Soler, 2016).

Students on their journey to graduation will engage in teaching and learning activities including assessment, a fundamental component of teaching and learning (Watling and Ginsburg, 2019). Using assessment *as learning* occurs when students are responsible for monitoring their own learning and act as their own assessors (Hume and Coll, 2009; Torrance, 2007). Assessment as learning is achieved by scaffolding activities of self-evaluation, self-assessment, peer-review and reflection throughout a curriculum (Ajjawi and Boud, 2017; Boud and Falchickov, 2006). Therefore, designing assessments as learning has potential to develop students' evaluative judgement (Boud et al., 2018; Boud and Soler, 2016; Yan et al., 2020).

Assessment can be a source of anxiety for students (Roos et al., 2020). Oral vivas as an assessment method have been associated with high levels of anxiety particularly when students perceive a lack of consistency between their performance and grade (Carter, 2012; Furnham et al., 2008; Huxham, Campbell, and Westwood, 2012; Kleiven, Tegani, and Sullivan, 2016). Conversely, there is evidence that oral vivas motivate students to learn and that students perceive them as authentic assessment compared with written assessments (Ganji, 2017; Orrock et al., 2014; Pearce and Lee, 2009). While it is accepted that an appropriate level of anxiety motivates students to engage in learning and perform optimally (Hooda and Saini, 2017; Rasouli, Alipour, and Ebrahim, 2018), high levels of anxiety are thought to impair academic performance and the student experience (Roos et al., 2020; Thomas, Cassady, and Heller, 2017).

Academic performance is generally assessed by an expert who unilaterally provides the judgement and delivers the grade and feedback to the student about the quality of their work (Brooks, 2012). However, if the delivery of grades and feedback engages students in a conversation, students may self-regulate their learning as they become active participants in a two-way feedback dialogue (Ajjawi and Boud, 2017; Boud and Soler, 2016; Ilangakoon et al., 2022; Merry et al., 2013; Tai et al., 2018) A new approach to develop this feedback dialogue is through consensus marking (Henderson et al., 2021; Thompson et al., 2017). The unique features of consensus marking provides students with an opportunity to actively engage in grading their own work and calibrate to the standard through a feedback dialogue with the assessor. Using consensus marking, the student reflects, discusses and evaluates their performance before the assessor passes judgement. Grading then occurs by calibrating the student's self-evaluation to the required standard through a feedback conversation and grade negotiation (Henderson et al., 2021). The relationship between reflection, self-assessment and feedback methods has not been considered explicitly in nursing education (Ilangakoon et al., 2022). Thus, consensus marking provides an explicit assessment approach that may develop students' evaluative judgement by synergising reflection, self-evaluation and feedback dialogue.

Two previous studies have evaluated consensus marking in health professional education. Undergraduate paramedicine students' (n = 90) perceptions of consensus marking in a face-to-face clinical viva were explored by Thompson et al. (2017) with students perceiving that consensus marking was fair and effective for learning while facilitating evaluation of their practice (Thompson et al., 2017). Subsequently, a retrospective analysis of postgraduate emergency nursing students' (n = 13) perceptions of consensus marking in an online oral viva was investigated (Henderson et al., 2021). In that study, consensus marking was perceived to enable reflection and self-evaluation while creating an opportunity to gain feedback through a collegial reflective conversation (Henderson et al., 2021). However, consensus marking has yet to be compared with the familiar marking methods where the assessor judges the students' performance.

Given the paucity of research on consensus marking as a grading method and the importance of actively engaging students in self-evaluation and feedback dialogue to develop evaluative judgement, this study aimed to explore postgraduate emergency nursing students' perceptions of oral vivas using consensus marking compared with assessor judgment in an oral viva exam. First, students' perception of their learning experience and relationship with the assessor were explored. Second, the study investigated differences in student anxiety and satisfaction between each of the grading methods.

2. Methods

2.1. Design

A convergent mixed-methods parallel research design with concurrent, yet separate, collection of data using questionnaires and semi-structured interviews was conducted. The data collection methods were equally weighted with analysis of the two components being independent, but interpretation of the results combined (Creswell and Plano Clark, 2011). Using both quantitative and qualitative data, the researchers sought to obtain different but complementary data of the students' experience to better understand the student perspective. To build a rich description of the phenomenon under investigation, a descriptive generic qualitative approach was used (Hoon Lim, 2011; Merriam, 2002, 2009). The consolidated criteria for reporting qualitative research (COREQ) were used to guide the qualitative research component (Tong, Sainsbury, and Craig, 2007).

2.2. Ethics

Ethical approval (No. 2106) was gained from the Human Research Ethics Committee of Flinders University where the research was conducted. All participants were provided with an information sheet outlining the study and then provided informed consent.

2.3. Participants and setting

A convenient sample of 56 registered nurses (M:F; 6:50) enrolled in a university postgraduate capstone emergency nursing unit of study were invited to participate. Assessment for this unit of study included two oral vivas conducted online using Blackboard Collaborate©. The first oral viva assessment occurred in week six of a 14-week semester where the assessor judgement of performance method was used. The second oral viva assessment using consensus marking occurred in week 13 of the same semester.

2.4. Oral viva grading methods

2.4.1. Assessor judgement of performance

The assessor, who was the expert judge of the student's performance, was the academic responsible for delivering the teaching. The assessor decided on the grade guided by a marking rubric and subsequently delivered verbal and written feedback. Ten minutes was allocated to complete the marking rubric, give verbal feedback and provide a written summary to each student. It was assumed that the student would interpret and apply the feedback given by the assessor to improve future performance.

2.4.2. Consensus marking

Consensus marking engaged students in reflection and evaluation of their performance before any judgement of performance was provided by the assessor (Henderson et al., 2021). Students reflected on whether their performance met the required standard, guided by a marking

rubric. Students then engaged in a feedback conversation with the assessor and calibrated their level of knowledge to the expected standard. Consensus was then reached between the assessor and the student on the grade achieved (Henderson et al., 2021; Thompson et al., 2017). On average, consensus marking took 15 min per student to complete.

All oral vivas were conducted by one assessor who graded and delivered feedback. Moderation occurred before the oral vivas by a content expert lecturer who was not connected to the research team. The instructions, marking guides and rubrics were assessed for clarity, transparency and fairness. Further, a lecturer who was independent to the research team reviewed eight randomly selected video recorded oral vivas to assess the feedback and grades for equity and fairness in both viva exams.

2.5. Data collection

2.5.1. Students perceptions

All students were invited to participate in a semi-structured on-line, in-depth interview by email. The interviews provided an opportunity to gain a deep and rich understanding of student perceptions, expectations and experience of consensus marking compared with an assessor grading of oral viva assessment. The interview questions are outlined in Table 1.

2.5.2. Anxiety

Anxiety was measured prior to each oral viva exam, with an Exam Anxiety Scale (EAS), completed online using QualtricsXM©. The EAS is a 12-item validated shortened anxiety test (Table 2), developed by Bedewy and Gabriel (2013) and was based on the 20-item Text Anxiety Inventory by Spielberger, (2010). The EAS used Likert scales with anchors at 0 = strongly disagree, 5 = neutral and 10 = strongly agree. The items identify three factors: (1) excessive performance anxiety that means excessive preoccupation with fear of failure and inability to relax.

Table 1
Interview guide.

Questions
a. I would like to start by asking if you can tell me generally about your experience of the oral viva exams?
Prompt question:
a. *What were you expecting before you participated in the first Viva?*
b. *How did this make you feel?*
b. And the second viva, were you expecting the same or different?
Prompt question:
a. *How did this make you feel?*
c. Can you tell me about the purpose of the oral viva?
Prompt question:
a. *How do you think the Viva is supposed to contribute to your learning?*
b. *Do you think that this learning outcome was achieved?*
c. *Was there any difference between the learning achieved in each of the vivas?*
d. *Now that you look back on the experience, what do you think that you learnt – regardless of whether this might have been the intention or not?*
e. *Was there any difference between the learning achieved in each of the vivas?*
d. Can you tell me about the grade that you achieved?
Prompt question:
a. *Was your grade what you expected?*
b. *Do you think this was a true reflection of your experience?*
c. *Was this the same for both vivas?*
e. What do you think was the role of the tutor in the oral vivas?
Prompt question:
a. *was this the same for both vivas?*
b. *How is the tutor role different to your role in the viva?*
c. *Was this the same for both vivas?*
f. What might you tell other students about your experience?
Prompt question:
a. Was this the same for both vivas?

Table 2
Exam Anxiety Scale (EAS) (Bowdey and Gabriel 2013).

Items (n = 12)	Factors		
	F1	F2	F3
My heart beats fast (races) during exams	x		
I expect my anxiety will interfere with my performance in the oral viva exam	x		
I am afraid of failing the oral viva exam	x		
Oral viva exams make me unable to relax	x		x
I tend to have breathing difficulty on exam days		x	
I develop diarrhea around the time of exams		x	
I am preoccupied with failure just before the oral viva exam		x	
Even when I am well prepared for the oral viva exam, i feel anxious about it		x	
I do not have confidence in myself to pass		x	
Oral viva exams make me unable to relax			x
Oral viva exams make me feel shaky			x
I experience an upset stomach on exam day			x
My sleep is disturbed before exam days			x
Factor 1: excessive performance anxiety			
Factor 2: negative academic self-concept and excessive autonomic response			
Factor 3: familiar test anxiety			

(2) negative academic self-concept and excessive autonomic response that refers to poor self-confidence in academic ability and fear of failure and (3) familiar test anxiety that refers to commonly experienced exam anxiety such as butterflies in the stomach or restless sleep the night before the exam.

2.5.3. Satisfaction

Student satisfaction was measured following each oral viva using the Satisfaction in Oral Viva Assessment Scale (SOVAS) completed online using QualtricsXM©. The SOVAS is a five-item questionnaire developed and validated by Salamonson et al. (2016) (Table 3). Scores from the five items are averaged to identify the level of satisfaction. The SOVAS uses Likert scales with anchors at 0 = strongly disagree, 5 = neutral and 10 = strongly agree. Two demographic questions were included to ascertain primary language spoken and years' experience working as a registered nurse. (Table 3).

2.6. Procedure

The interviews were conducted online after participants had completed both vivas and had received their final grades for the unit of study. Two members of the research team who were not part of the teaching team and did not have a pre-existing relationship with the students conducted the interviews (LC, RA). The primary researcher (BH) was blinded to who was participating in the research project. The audio recordings of the interviews were transcribed using Descript© and manually checked for accuracy. No field notes were made and the interviews lasted between 20 and 30 min.

Participant anxiety was measured on two test occasions with the EAS administered three days before each of the oral viva assessments. The questionnaire completed before the first oral viva exam was identified as EAS1 and the EAS questionnaire completed before the second oral viva exam was identified as EAS2. Student satisfaction with the SOVAS was measured immediately following each oral viva assessment on both test

Table 3
Satisfaction in Oral Viva Assessment Scale (SOVAS) (Salamonson et al., 2016).

The oral viva assessment in the emergency nursing course has helped me learn
I was able to learn from the feedback I received from the oral viva assessment
There were clear guidelines for the oral viva assessment in this topic
During the oral viva I had enough time to answer the questions
Compared to a written assignment I think the oral viva assessment is
What language do you speak at home
How long have you worked as a registered nurse

occasions. The SOVAS questionnaire completed after the first oral viva exam was identified as SOVAS1 and the questionnaire completed after the second oral viva exam was identified as SOVAS2.

2.7. Data management and analysis

2.7.1. Student perceptions

Using NVIVO© software and a manual coding method, the transcribed interviews were coded, and themes identified. A reflexive thematic analysis approach was used (Braun and Clarke, 2019). All members of the research team conducted the thematic analysis using a six-stage approach (Braun and Clarke, 2006). Initial coding of each interview identified fragments of data, phrases and key words that related to themes already identified in the literature, extended the findings of previous studies, related specifically to the experience(s) of the students, represented students' perceptions of the exam process and/or components of evaluative judgment. Data were reviewed each time a new theme emerged and the theme was either confirmed by further examples or modified to reflect a more nuanced understanding of the responses.

The researchers engaged in an iterative cyclical process to revise the codes to identify connecting relationships within and between the codes. Meaningful patterns were identified which were inductively conceptualised into themes (Braun and Clarke, 2006; Morse, 2002).

Dependability was achieved by having two of the researchers (BH and LKL) review.

transcribed data to validate the codes and themes (Creswell, 2018) and confirm data saturation when no new themes emerged. The data analysis was conducted after participants had completed their studies with participants no longer having access to their university emails or online learning platform. This precluded the opportunity to engage with member checking. Peer briefing was conducted to ensure trustworthiness and credibility of the thematic analysis process (Lincoln and Guba, 1985). The research team engaged in fortnightly reflexive discussions during the data analysis phase and the primary researcher maintained a reflective journal to identify any personal biases or potential issues that might influence the data analysis.

2.8. Anxiety and satisfaction

Using IBM SPSS Statistics© version 25, data from the SOVAS and EAS questionnaires were analysed using non-parametric tests. Questionnaires were re-identified so that they could be paired across the two test occasions for each participant. Questionnaires that were not fully completed or could not be paired, were removed. Thus, participants who completed all questions for both test occasions for EAS and SOVAS were included in the analysis.

A Shapiro-Wilk test was conducted to determine whether the data sets produced a normal distribution (González-Estrada and Cosmes, 2019). The results of the Shapiro-Wilk test were significant for factor 2 EAS2 $W = 0.92$, $p < 0.05$, factor 3 EAS1 $W = 0.92$, $p < 0.05$ and factor 3 EAS2 W= 92, p = <0.05. These results suggested that for the pre-test factor 3 in EAS1 and factors 2 and 3 in EAS2 were unlikely to have been produced by a normal distribution; therefore, normality could not be assumed.

Likewise, the post-test SOVAS2 results of the Shapiro-Wilk test were significant $W = 0.92$, $p < 0.05$ suggesting that a normal distribution could not be assumed. Attempts to transform the data sets using log, square root and reflection of the negatively skewed data were unsuccessful. The remaining data sets were normally distributed, however, for consistency, the Wilcoxon Signed Ranks Test was used to test significance for all paired data.

3. Results

3.1. Participant characteristics

All 56 students enrolled in the unit of study participated in the oral viva examinations. After removing incomplete questionnaires, 46 participants had completed both test occasions for the EAS and the SOVAS (82% of the cohort). Of these, 13 participants consented to be interviewed (23%). Of the 46 participants, 41 spoke English as their primary language. The average (SD) as a registered nurse was 8.1 (6.2) years.

3.2. Perceptions

An example of excerpt phrases relevant to the initial coding from one participant is provided. (Table 4)

The following six themes were identified from the 13 transcribed interviews with most participants' experiences aligning with multiple themes:

1. Accountable for learning
2. Authentic assessment and grading method that translates to clinical practice
3. Feedback, dialogue and immediacy
4. Reflect and self-evaluate
5. Test anxiety
6. Voice and shifting power dynamics

Table 4
Initial coding.

Initial codes	Interview excerpt – Participant 4
Acknowledging the anxiety or stress	I'm someone who struggles really bad with anxiety, especially with known assessments. I talk myself out of them quite a lot, so I struggled really badly with anxiety.
Expressing feelings of collegiality, able to ask questions	I did like the second style better because we were able to then have an opportunity to say like, Oh, I felt like I did really well there. What did you think? And they'd say yes, no, it kind of re confirms like where you are confident. And it also gets you to kind of address more likely deficits and ask questions that maybe you wouldn't get a chance to ask. Maybe the first style didn't give you that opportunity. Whereas the second style did,
Valuing the opportunity for refection and going back over performance Valuing feedback	I found the first oral Viva, very straight down, the line like it started and finished and ran very smoothly. The second one, I think I appreciate it a lot better because of the end, going back through it, being able to have an opportunity to go back over stuff and clarify things and get extra education and obviously bits that I did lapse and that we identified with deficits.
Identifying that the assessment method was authentic to clinical practice	I see it as the same thing that we used to do in uni, like the clinical year you kind of, you go in, you have your fake patient there, and you can actually perform your clinical skills and go through a case scenario. That's more realistic and really tests you. You don't have the answers in front of you. You don't have all this information, they're giving you the answers.
Have to learn and forced to learn.	Like you really actually need to know what you're doing and know what you're on about to be able to run through a scenario like that. So I see it as more of like an online version of a practical assessment.

1. Accountable for learning.

Ten of the 13 participants (77%) expressed that the oral viva assessment compelled them to learn and made them feel accountable for their learning. For example:

" I kind of more appreciated because I'm reading it and I'm reading it and I need to really read it and understand it. So then I can say it when I'm getting, like examined." (P12).

This accountability for learning was highlighted by participants' desire to showcase their knowledge in an assessment method that could potentially highlight any knowledge deficits:

"…for the viva I had to actually know what I was talking about and had to prove that I knew what I was talking about." (P1).

"That's more realistic and really tests you. You don't have the answers in front of you. You don't have all this information… Like you really actually need to know what you're doing and know what you're on about to be able to run through a scenario like that." (P4).

2. Authentic assessment and grading method that translates to clinical practice

Eight of the 13 participants (62%) expressed that the oral viva with consensus marking reflected the reality of their work life. One participant described consensus marking as:

"… a lot better form of assessment, particularly in a clinical subject, they made you consider on the spot just like you would in the emergency department. And for me that just related a lot more to the normal practice that we'd go about in the clinical setting." (P15).

And that consensus marking felt like a debrief after a clinical event and the realistic scenarios related to their everyday workplace experiences as the following participant notes:

"…definitely felt more like you know, debriefing after work, this code has just happened and this is our debrief, that's probably more what it felt like then an exam … I do this every day. Like, what am I stressing about this is work." (P10).

3. Feedback, dialogue and immediacy

Eleven of the 13 participants (85%) expressed that consensus marking gave them immediate and detailed feedback. One participant said:

"It was just good to provide that feedback, but also good to provide the feedback then and there straight away, there was no time delay" (P9)

The immediacy and detailed feedback dialogue assisted students understanding of where they needed to improve and where they did well as demonstrated by these remarks:

"And actually, understand the feedback you've received rather than going, this is what they've written, how the, how do I fix that?" (P15).

"I thought was better than the first [viva], I felt that the feedback was a bit more direct. I just felt like we got much better feedback for each single part, rather than the first traditional sort of marking that was just sort of a generalized feedback…I felt like the feedback was probably the best, the most noticeable difference." (P1).

4. Reflect and self-evaluation

Eight of the 13 participants (62%) appreciated the opportunity to reflect on their performance and self-evaluate including:

"I really liked the second, consensus way of marking because we were able to reflect back on what I missed or what I could have done better, what I did well". (P5)

Participants expressed that the opportunity to reflect and evaluate their performance assisted them in self-identifying future learning needs as demonstrated by this student's feedback:

"I found this was definitely a good way to learn because it helped you to be more self-reflective and identify your own sort of areas of improvement rather than just relying on our mentor and educator to do that for you. There were more just aspects I thought I could have improved on for the future. Whereas if I did that in an exam, I'd probably remember the information and data dump it straight away. Whereas now I'm actually actively seeking out x-rays to look at and try and review a doctors' and get better at that." (P15)

5. Test anxiety

Twelve of the 13 participants (92%) expressed that an oral viva caused anxiety. The causes were varied, some participants were anxious because there was a compulsion to learn and prepare for the exam. For others, it was fear of the unknown, not knowing what questions would be asked. For example:

"Well, I think the vivas in themself are both very daunting, no matter. What type of grading scale". (P6)

One participant found the concept of consensus marking increased anxiety:

"I think, particularly on the second one, [consensus marking] because I knew somewhere, I'm marking myself." (P14).

Conversely some participants found that because they knew they could grade themselves and engage in a feedback conversation this reduced their level of stress:

"I struggled really badly with anxiety, so I think I liked the second process [consensus marking] better than the first one… and that was only just because of that communication pathway at the end." (P4).

Stress and anxiety for one participant was a motivator to learn, whereas two participants had anxiety levels that produced somatic effects that had a negative impact on their ability to perform:

"the first one I was quite anxious about and to be honest, I was quite unwell on the day I had to pause the thing so I could vomit but the second one, I really, I knew the expectations from the first time and I wasn't nervous." (P11).

Participants expressed that their stress and anxiety levels were reduced in the second oral viva (consensus marking) simply because this was the second time that they had engaged in an oral viva exam. They had more of an idea about what to expect, therefore, their fear of the unknown was reduced:

"I don't think I was as stressed for the second one because I think I had a little bit of an idea of how it was going to go. So I was definitely more stressed about the first one, the second one wasn't as bad". (P1)

"definitely felt a lot more comfortable with the second one, because we've done one. It wasn't a fear of the unknown", (P9)

6. Voice and shifting power dynamics

Nine of the 13 participants (69%) used words such as justify, discuss, explain, talk, rationalise, colleague, circle back, align, confidence, agreement when responding to the question about consensus marking as a grading method. One respondent commented:

"I think just because when we talked about them together, we actually went through the subject sort of headings one by one. And because we had to obviously come to an agreement on a grade, I felt like we would both be able to talk and sort of justify the grade. I liked the fact that like I had the time to justify and explain things further if I needed to." (P1).

The ability to have a voice was important to students. In some cases, there was a perception that it reduced the stress of the exam, while others felt it was less like an exam and more like a collegial discussion, including:

"… you feel less like sort of a hierarchy, like tutor student. It was more like we're working together and like we were going to work out what I knew without, being graded straight away." (P6).

3.3. Questionnaires

3.3.1. Anxiety

Excessive performance anxiety, negative academic self-concept and excessive autonomic response and familiar test anxiety were significantly lower ($p < 0.001$) when students engaged with consensus marking compared with tutor judgement marking (Table 5).

3.4. Satisfaction

Student satisfaction was significantly higher with consensus marking compared with tutor judgement marking ($p < 0.01$) (Table 5).

4. Discussion

This is the first prospective study to compare consensus marking to an assessor judgement of an oral viva in the tertiary setting. Oral vivas using consensus marking were perceived by students to enhance their accountability for learning, be an authentic method of grading, facilitate reflection and self-evaluation and provide opportunity to engage in a feedback dialogue. Importantly, consensus marking was perceived to shift the power dynamics between student and assessor. The quantitative questionnaire results supported these findings as students were more satisfied and less anxious with the consensus marking method compared with assessor judgement.

The four key themes identified from the interviews (accountability for learning; authentic assessment and grading method; feedback, dialogue and immediacy; reflect and self-evaluate) support the concept that consensus marking facilitates the development of evaluative judgement. Participants noted that consensus marking provided the opportunity to reflect and evaluate their own performance while helping to self-identify future learning needs in a dialogue akin to the real-world clinical setting. The development of evaluative judgement through this novel method may therefore assist emergency nurses develop the ability to reflect and self-evaluate performance that supports lifelong learning beyond the conclusion of the course (Boud et al., 2018).

Authentic assessment has been shown to improved learning outcomes for students (Villarroel et al., 2020). Participants in the current study perceived that consensus marking was authentic to their workplace with the discussion and feedback dialogue being similar to a clinical debrief with colleagues. If students perceive the learning activities as relevant to the workplace, then consensus marking may help students conceptualise learning, stimulate deeper learning and increase motivation for learning (Raymond et al., 2013; Villarroel et al., 2018).

Consensus marking also facilitated a student-focused approach to feedback dialogue, where the student drove the feedback conversation around their self-evaluation and negotiation of their grade. This is important as student dissatisfaction with feedback requires a change in approach (Carless and Boud, 2018). The two-way collegial conversation in the consensus marking enabled students to self-identify where they could improve and the student-centred approach to the feedback dialogue resulted in greater satisfaction with the provided feedback and may have been a factor in the reporting of increased satisfaction levels in the SOVAS survey. The literature around feedback dialogue is lacking on how to engage students in feedback conversations (Ossenberg, Henderson, and Mitchell, 2018). The current study adds to the discourse regarding a potential method that actively engages students in feedback dialogue while also shifting power dynamics. Participants were empowered by engaging in a feedback dialogue where they were able to justify and explain their actions or omissions during the oral viva exam. The perception of having a voice and some control over the grading could be a contributing factor to the EAS survey reporting lower anxiety levels with the consensus grading method.

Students' anxiety level was lower prior to the oral viva exam with consensus marking compared with the viva that was judged by the assessor in all three domains (performance anxiety; academic self-concept and autonomic response; and familiar test anxiety). Anxiety has been shown to have an impact on cognitive ability and academic performance (Hooda and Saini, 2017). In this study, instances where the student believed that they would fail despite preparation was considerably less in the oral viva using consensus marking compared with the assessor judgement. The lower anxiety with consensus marking may be explained by a reduction in the perceived power imbalance between the assessor and student and might also explain the reduction in familiar test anxiety, negative academic self-concept and excessive autonomic response. However, the possibility remains that because the consensus marking oral viva was conducted after the first oral viva this may have led to a learning effect / prior exposure, which resulted in a reduction in anxiety. To mitigate this, students were provided with explicit and transparent information and a video recording on the consensus method on commencement of the unit of study. Therefore, students were aware of the two different grading methods and expectations from the beginning of the semester.

Table 5
Anxiety and satisfaction outcomes over the two test occasions (assessor judgement and consensus marking).

Outcomes	Assessor judgement median (IQR)	Consensus marking median (IQR)	CI	n	*p*
Factor 1 -Excessive performance anxiety	7.75 (2.50)	6.25 (4.13)	-2.25 - - 0.62	46	<0.001
Factor 2 -Negative academic self-concept & excessive autonomic response	5.80 (3.10)	3.70 (2.65)	-2.40 - - 1.00	46	<0.001
Factor 3 - Familiar test anxiety	7.12 (3.31)	5.12 (6.56)	-2.25 - - 3.37	46	<0.001
Satisfaction	40.00 (11.00)	45.50 (9.00)	0.61 - 0.12	46	<0.01

IQR Interquartile range; CI Confidence Interval.

2. Study strengths and limitations

The study has several strengths. The current study is the first to compare the application of two different marking methods for online oral vivas and provides preliminary evidence of the usefulness of consensus marking in this cohort of students adding to the discourse on engaging students in feedback dialogue and developing evaluative judgement. A rigorous approach was used to analyse qualitative data, with members of the research team independent to the data collection validating codes and themes. Further, validated tools were used to measure satisfaction and anxiety. However, some limitations are accepted. First, the one group, non-randomised design of the study means that we are unable to conclusively state differences in perceptions, anxiety and satisfaction between the two marking methods, as the exposure to the first online viva and marking method may have had an impact on these variables for the subsequent marking method and oral viva. Second, the researchers acknowledge that the student-tutor relationship creates an inherent power imbalance, and that the researcher (BH) was a tutor and assessor in this project. To mitigate the risk that non-participation may have negatively affected their relationship with the tutor, students were informed that the tutor was blinded to the consenting research participants. Further, the research team used moderation, reflexive journaling, and discussion to ensure equity in the assessment process.

6. Conclusion

Consensus marking provides an opportunity for students to reflect

and self-evaluate their own performance which supports the concept of developing evaluative judgement. The consensus marking method appeared to improve students' understanding of feedback with students perceiving a reduction in the power imbalance between assessor and student. Consensus marking resulted in less anxiety and increased student satisfaction compared with a traditional assessor assessment of a postgraduate oral viva. The findings of this study may inform a larger randomised controlled trial, investigating different assessment types and how they support students to evaluate their own performance.

Ethics

Ethical approval (no. 2106) was gained from the Flinders University Human Research Ethics Committee. All participants provided informed consent.

Funding

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Author contributions

Bridget Henderson and **Lucy Chipchase:** conceived and designed the experiments, performed the experiments, analyzed and interpreted the data, wrote the paper. **Lucy Lewis:** conceived and designed the experiments, analyzed and interpreted the data, wrote the paper. **Robyn Aitken:** conceived and designed the experiments, performed the experiments, analyzed and interpreted the data. All authors contributed to the reviewers' comments.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have influenced the work reported in this paper.

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Appendix 5.4 Ethics Approval

HUMAN ETHICS LOW RISK PANEL APPROVAL NOTICE

Dear Mrs Bridget Henderson,

The below proposed project has been **approved** on the basis of the information contained in the application and its attachments.

Project No:	2106
Project Title:	Consensus study: comparing traditional and consensus marking in postgraduate nursing education
Primary Researcher:	Mrs Bridget Henderson
Approval Date:	02/07/2020
Expiry Date:	30/04/2021

Please note: *Due to the current COVID-19 situation, researchers are strongly advised to develop a research design that aligns with the University's COVID-19 research protocol involving human studies. Where possible, avoid face-to-face testing and consider rescheduling face-to-face testing or undertaking alternative distance/online data or interview collection means. For further information, please go to https://staff.flinders.edu.au/coronavirus- information/research-updates.*

RESPONSIBILITIES OF RESEARCHERS AND SUPERVISORS

1. **Participant Documentation**

Please note that it is the responsibility of researchers and supervisors, in the case of student projects, to ensure that:

- all participant documents are checked for spelling, grammatical, numbering and formatting errors. The Committee does not accept any responsibility for the above mentioned errors.

- the Flinders University logo is included on all participant documentation (e.g., letters of Introduction, information Sheets, consent forms, debriefing information and questionnaires – with the exception of purchased research tools) and the current Flinders University letterhead is included in the header of all letters of introduction. The Flinders University international logo/letterhead should be used and documentation should contain international dialing codes for all telephone and fax numbers listed for all research to be conducted overseas.

Annual Progress / Final Reports

In order to comply with the monitoring requirements of the *National Statement on Ethical Conduct in Human Research 2007 (updated 2018)* an annual progress report must be submitted each year on the approval anniversary date for the duration of the ethics approval using the HREC Annual/Final Report Form available online via the ResearchNow Ethics & Biosafety system.

Please note that no data collection can be undertaken after the ethics approval expiry date listed at the top of this notice. If data is collected after expiry, it will not be covered in terms of ethics. It is the responsibility of the researcher to ensure that annual progress reports are submitted on time; and that no data is collected after ethics has expired.

If the project is completed *before* ethics approval has expired please ensure a final report is submitted immediately. If ethics approval for your project expires please either submit (1) a final report; or (2) an extension of time request (using the HREC Modification Form).

For student projects, the Low Risk Panel recommends that current ethics approval is maintained until a student's thesis has been submitted, assessed and finalised. This is to protect the student in the event that reviewers recommend that additional data be collected from participants.

Modifications to Project

Modifications to the project must not proceed until approval has been obtained from the Ethics Committee. Such proposed changes / modifications include:

change of project title;

- change to research team (e.g., additions, removals, researchers and supervisors) • changes to research objectives;
- changes to research protocol;
- changes to participant recruitment methods;
- changes / additions to source(s) of participants;
- changes of procedures used to seek informed consent; • changes to reimbursements provided to participants;
- changes to information / documents to be given to potential participants;
  changes to research tools (e.g., survey, interview questions, focus group questions etc);
  extensions of time (i.e. to extend the period of ethics approval past current expiry date).

To notify the Committee of any proposed modifications to the project please submit a Modification Request Form available online via the ResearchNow Ethics & Biosafety system. Please note that extension of time requests should be submitted prior to the Ethics Approval Expiry Date listed on this notice.

Adverse Events and/or Complaints

Researchers should advise the Executive Officer of the Ethics Committee on 08 8201-3116 or human.researchethics@flinders.edu.au immediately if:

- any complaints regarding the research are received;
- a serious or unexpected adverse event occurs that effects participants;
- an unforeseen event occurs that may affect the ethical acceptability of the project.

Yours Sincerely, Hendryk Flaegel *on behalf of*
Human Ethics Low Risk Panel Research Development and Support
human.researchethics@flinders.edu.au P: (+61-8) 8201 2543

Flinders University
Sturt Road, Bedford Park, South Australia, 5042 GPO Box 2100, Adelaide, South Australia, 5001

http://www.flinders.edu.au/research/researcher-support/ebi/human-ethics/human-ethics_home.cfm

Appendix 5.5 Consent Form

CONSENT FORM

Develop theoretical insights into postgraduate nursing students' perceptions of their learning experience with two different online assessments: traditional viva and viva using consensus marking.

This means you can say NO

RESEARCHERS: Bridget Henderson, Associate Professor Lucy Lewis, Professor Robyn Aitken, Professor Lucy Chipchase,

I have read the Participant Information Sheet and understand all of the information describing this study including that:

- the research is about my experience of participating in oral vivas using two different grading methods, traditional tutor judgment and consensus marking.

- the researchers are asking for my permission to participate in an interview
- my participation is anonymous, and information can no longer be identified, preventing anyone identifying my responses and preventing retrieval from the survey database
- I don't have to give a reason if I choose not to participate
- participating, or deciding not to participate at any time will not affect me in anyway, nor will it affect my current studies or future enrolment in any courses offered by Flinders University.
- there is no direct benefit to me personally as a participant, but that by participating I might contribute to improving the way in which students are assessed in online oral vivas
- the researchers are the only people who have access to the recorded audio data, which will be de-identified and stored in password protected computer files or locked up until it is destroyed
- while information gained during the study may be published, I will not be identified

This research project has been approved by the Flinders University Human Research Ethics Committee (Project Number 2106). For more information regarding ethical approval of the project the Executive Officer of the Committee can be contacted

If you agree to participate, a copy of this form is available to download for you to keep

Appendix 5.6 Participant Information

INFORMATION SHEET FOR PARTICIPATION IN RESEARCH

Title: Consensus study: comparing traditional and consensus marking in postgraduate nursing education.

Investigator:

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Description

The aim of this research project is to understand postgraduate emergency nursing students' perception of their experience of undertaking an oral viva examination using consensus marking and compare it to their experience of an oral viva examination using traditional tutor judgement.

How do I participate in this research project?
When you volunteer to complete four on-line surveys, one before and after each oral viva assessment for NURS8752 you can select the option to volunteer to take part in both the routine quality improvement process for evaluating the Topic, and the research project.

The anonymous data is collected by the Post Graduate Course Coordinator.
When the Topic is finished and all grades are allocated, the anonymous data from all students who agreed to participate in the surveys for research are sent in a secure password protected file to the researchers to analyse.

The research team will not know if you have participated in the survey for quality improvement purposes or whether your data will be included or not included in the research project.

What if I do not want to participate in this research project?
There is an option at the end of each survey for you to select if you do not want to participate in the study. You can select to have your survey data only used for routine quality improvement processes and not the research project. You can if you prefer, select not to answer the survey for both the quality improvement and research project.

How this project benefits you and future students

The sharing of your experience will help in the development, implementation, and evaluation of a new method of assessing oral vivas in the online medium.

Withdrawal

You can withdraw at any time. However, once you have submitted any of the surveys that data cannot be removed from the research project because the surveys are anonymous and there is no way to identify or retrieve your individual data.

Are there any risks if I am involved?

No risks or discomforts are anticipated with your participation in this project. However, if you have any concerns regarding actual or potential risks or discomforts, please inform the supervisors of this project or the ethics committee. Should you require counselling support during or after participating in this project please contact Lifeline on 13 11 14 a free of charge 24-hour service. If you are a University student, you can also contact your *Universities student support services.*

Findings of the research

At the conclusion of the research project an email will be sent to all students who were enrolled in NURS8752 summarising the research findings.

How do I participate?
Participation is entirely voluntary. If you require additional information please feel free to email Lucy Lewis at Lucy.lewis@flinders.edu.au . Lucy is the primary supervisor for Bridget's PhD project.

Thank you for reading this information sheet and we hope you will accept our invitation to be involved in this research project.

This research project has been approved by the Flinders University Human Research Ethics Committee (Project Number 2106). For more information regarding ethical approval of the project the Executive Officer of the Committee can be contacted by telephone on 8201 2543, or by email human.researchethics@flinders.edu.au

Appendix 6.1 Authorship Declaration

Office of Graduate Research
Room 003, Registry Building
Bedford Park, SA 5042
GPO Box 2100, Adelaide 5001 Australia
Email: hdrexams@flinders.edu.au
Phone: (08) 8201 3854
Website: https://students.flinders.edu.au/my-course/hdr
CRICOS Provider: 00114A

CO-AUTHORSHIP APPROVALS FOR HDR THESIS FOR EXAMINATIONS

In accordance with Clause 5, 7 and 8 in the HDR Thesis Rules, a student must sign a declaration that the thesis does not contain any material previously published or written by another person except where due reference is made in the text or footnotes. There can be no exception to this rule.

a. Publications or significant sections of publications (whether accepted, submitted or in manuscript form) arising out of work conducted during candidature may be included in the body of the thesis, or submitted as additional evidence as an appendix, on the following conditions:
   I. they contribute to the overall theme of the work, are conceptually linked to the chapters before and after, and follow a logical sequence
   II. they are formatted in the same way as the other chapters (i.e. not presented as reprints unless as an appendix), whether included as separate chapters or integrated into chapters
   III. they are in the same typeface as the rest of the thesis (except for reprints included as an appendix)
   IV. published and unpublished sections of a chapter are clearly differentiated with appropriate referencing or footnotes, and
   V. unnecessary repetition in the general introduction and conclusion, and the introductions and conclusions of each published chapter, is avoided.

b. Multi-author papers may be included within a thesis, provided:
   I. the student is the primary author
   II. there is a clear statement in prose for each publication at the front of each chapter, recording the percentage contribution of each author to the paper, from conceptualisation to realisation and documentation.
   III. The publication adheres to Flinders Research Publication, Authorship and Peer Review Policy, and
   IV. each of the other authors provides permission for use of their work to be included in the thesis on the form below.

c. Papers where the student is not the primary author may be included within a thesis if a clear justification for the paper's inclusion is provided, including the circumstances relating to production of the paper and the student's position in the list of authors. However, it is preferable to include such papers as appendices, rather than in the main body of the thesis.

STUDENT DETAILS

Student Name	Bridget Henderson
Student ID	2082153
College	College of Nursing & Health Sciences
Degree	PhD
Title of Thesis	Developing nursing students' evaluative judgement: exploring the pedagogical concept in nursing education

CO-AUTHORSHIP APPROVALS FOR HDR THESIS EXAMINATION

PUBLICATION 3

This section is to be completed by the student and co-authors. If there are more than four co-authors (student plus 3 others), only the three co-authors with the most significant contributions are required to sign below.

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Full Publication Details	Henderson, B., Chipchase, L., Golder, F., & Lewis, L. K. (2023). Developing student nurses' evaluative judgement in clinical practice tertiary education: A systematic scoping review of teaching and assessment methods. Nurse Education in Practice, 73, 103818–103818. https://doi.org/10.1016/j.nepr.2023.103818
Section of thesis where publication is referred to	Chapter 5 pages 102-158

Student's contribution to the publication

80	%	Research design
85	%	Data collection and analysis
75	%	Writing and editing

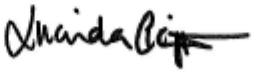
Outline your (the student's) contribution to the publication:

Bridget Henderson contributed to the conceptualisation of the research questions and research design with input from the supervisory team. Bridget Henderson conducted the data collection, screening of the literature was conducted by Bridget Henderson and Fleur Golder. Analysis of the results of the literature review was conducted by Bridget Henderson with input from the supervisory team. Bridget Henderson completed the initial draft of the manuscript the supervisory team edited multiple versions of the manuscript.

APPROVALS

By signing the section below, you confirm that the details above are an accurate record of the students contribution to the work.

Name of Co-Author 1 Lucy Lewis Signed  Date 18/09/2024

Name of Co-Author 2 Lucy Chipchase Signed  Date 20/09/2024

Name of Co-Author 3 Robyn Aitken Signed  Date 26/09/2024

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Developing student nurses' evaluative judgement in clinical practice tertiary education: A systematic scoping review of teaching and assessment methods

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ABSTRACT

Objectives: This review aimed to systematically scope undergraduate or postgraduate tertiary higher education nursing students' clinical practice teaching and assessment methods to identify features that align with promoting students' evaluative judgement.

Introduction: Evaluative judgement is a new concept to nursing tertiary education. Currently, there are no published reviews of evaluative judgement in nursing clinical practice education. This review aims to assist nursing educators to operationalise the concept of evaluative judgement in clinical practice education. As such the starting point was to determine features of evaluative judgement in current clinical teaching and assessment designs.

Inclusion criteria: Peer reviewed qualitative or quantitative studies that have evaluated teaching and/or assessment of tertiary (university/higher education) pre-registration (undergraduate) or post-registration (postgraduate) nursing students' clinical practice.

Methods: The systematic scoping review was prospectively registered systematic review (OSF DOI 10.17605/OSF.IO/PYWZ6) reported using PRISMA guidelines. A systematic search of five databases (Medline, Scopus, Web of Science, ProQuest, CINAHL) was conducted, limited from 1989 onwards and in English.

Two reviewers independently screened titles and abstracts, then full text, with disagreements resolved with a third independent author. Data were extracted, including the frequency and methods of developing students' evaluative judgement across the categories of discerning quality, judgement process, calibration and feedback. A narrative synthesis was performed.

Results: Seventy-one studies were included (n=53 teaching, n=18 assessment). Most of the included studies, included some, but not all, of the features to develop nursing students' evaluative judgment. For teaching methods, the most identified evaluative judgement features in the included studies were discerning quality (n=47), feedback (n=41) and judgement process (n=21). Only three studies included a method of calibration. For the assessment methods, feedback (n=16), discerning quality (n=15), judgement process (n=9) and calibration (n=4) were included. Many clinical practice teaching and assessment methods in nursing included features that develop students' evaluative judgement, with methods relating to discerning quality and feedback well embedded. Further adjustments are required to include methods to assist students to judge and calibrate their own performance.

Conclusion:: This systematic scoping review identified that evaluative judgement in current nursing clinical teaching and assessment is not an overt aim. With minor adjustment to teaching and assessment design, nursing students could be better supported to develop their ability to judge the value of their own work.

1. Background

On completion of their studies, nurses enter the workforce as registered professional practitioners. This transition to clinical practice is often daunting as they no longer have access to clinical tutors or facilitators to provide direction and feedback on their performance

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(Hampton et al., 2020). Moreover, nursing regulatory standards expect qualified nurses to be reflective practitioners, able to recognise when they lack knowledge or skills, seek support and be lifelong learners to safeguard patient safety (NMBA, 2022). Thus, it is incumbent on higher education providers to support students to develop these capabilities. One concept that provides a foundation for the development of these capabilities is evaluative judgement and while not new, provides a language that could be embraced in assessment and teaching design (Fischer, 2019; Boud et al., 2018).

The concept of self-evaluation was initially raised by Sadler, (1989) pg.110) who theorised that *"for students to be able to improve, they must develop the capacity to monitor the quality of their own work"*. This concept has been raised again in context of modern education and the term evaluative judgement has been introduced as *"the capability to make decisions about the quality of work of self and others"* and is increasingly viewed as an important graduate attribute for all health professionals (Hampton et al., 2020; Henderson et al., 2015; Tai et al., 2018). This is because developing evaluative judgement is thought to support the transition from student to practitioner where structured support and feedback from educators is no longer available (Boud et al., 2018).

Nursing students' clinical practice is supervised by clinical educators, preceptors or facilitators who provide students with feedback on their performance (Ford et al., 2016). Feedback methods in clinical practice education often fail to provide students with opportunities to engage in a dialogue with educators where they can explore and understand the assessment of their performance (Alfehaid et al., 2018; Atmaca, 2016; Bijami et al., 2016; Henderson et al., 2019; Nuuyoma, 2021; Paterson et al., 2020; Wong and Shorey, 2022). This deviates from contemporary theories on feedback practices (Boud and Molloy, 2013; Dawson et al., 2018; Molloy & Van De Riddler, 2018). Feedback should be positioned to provide students with opportunity for reflection, self-evaluation and active participation in their learning, supporting the concept of developing evaluative judgement (Henderson et al., 2021, 2022; Johnson et al., 2016; Ilangakoon et al., 2021). Evaluative judgement as a defined graduate attribute is relatively new in nursing education (Ilangakoon et al., 2022). Many activities in current nursing clinical practice teaching and assessment methods are well positioned to support students' development of evaluative judgement, such as, reflection, self-evaluation/assessment, peer review and co-creating assessments (Ibarra-Sáiz et al., 2020). This systematic scoping review will focus on the teaching and assessment methods used in clinical practice to assist nursing educators and curriculum designers operationalise the concept of evaluative judgement in clinical practice education. However, developing evaluative judgement is more than providing a selection of teaching activities or engaging students in reflection, self-assessment, or feedback conversations as it is a complex theoretical concept that involves orientating the learning pedagogies to include developing evaluative judgement as a learning outcome and should be scaffolded throughout the curricula (Boud et al., 2018).

Scholars in this field have identified several features needed to support students to develop this important capability (Boud et al., 2018; Gladovic et al., 2022; Johnson et al., 2016). Four features (discerning quality, judgement process, calibration and feedback) have been identified as having potential to provide educators with a framework for designing teaching and assessment activities to develop students' evaluative judgement. See Table 1 for the statement of meaning and examples of each feature.

Empirical research on evaluative judgement is limited (Khosravi et al., 2020) and research on observing students' evaluative judgement through teaching and assessing activities has been identified as a potential starting point for qualitative research (Gladovic et al., 2022). Integral to nursing education is the clinical teaching and learning activities where students can translate theory into practice (Jamshidi et al., 2016; Sweet and Broadbent, 2017). How students are socialised to the profession can be influenced by the quality of the clinical practice educational experience (Erlam et al., 2018). The introduction of

Table 1
Statement of meaning and key features of evaluative judgement.

Features of Evaluative Judgement	Statement of meaning	Examples demonstrating methods of delivery
Discerning quality	Providing students with an understanding of what good work looks like as a benchmark to judge their own work against (Boud et al. 2018)	Students are provided with the following to help them identify what good quality work looks like: Standards or protocols Guidelines (including policies) Demonstration (including video recordings, practical demonstration from experts) Instructions (including written instructions, verbal instructions) Discussion (about the expectations or requirements with educators or peers) For assessment methods - Exemplar/ or rubric (include examples of assignments, marking guides) Pre assessment discussion (includes any discussions in class or online about the requirements of the assessment with the educator and/or peers)
The judgement process	Providing students with opportunities to practice judging their work. before expert judgement is given (Boud et al. 2018)	Students were provided the following ways to judge their work: Self-evaluate (including self-assessment) Peer review (before grading by expert) Comparison with others work (Others include, other students, peers, experts, to assist in self-evaluation before their work is judged) Grade predicting (students self-assess with the purpose of grading their work before it is graded by an educator)
Calibration	Reviewing students' self-evaluation to challenge bias in the judgement process (Boud et al. 2018). Challenging where the work was sub-standard and identifying where work met the standard, in partnership with the student, supports students to develop evaluative judgement (Ilangakoon et al. 2022).	Calibration occurred if the self-evaluation/self-assessment was reviewed by the educator with the student.
Feedback	How feedback is delivered is key to successful engagement in fostering evaluative judgement (Molloy and Boud, 2012) Facilitating a feedback conversation to help students adjust their judgement and calibrate to the required standard (Molloy and Boud, 2012). Engaging students in reflection, self-evaluation, and feedback-dialogue to develop their skills in evaluative judgement (Ajjawi and Boud, 2017; Ilangakoon et al. 2022).	The feedback process was described as: Feedback conversation (students were engaged in a verbal exchange with the educator) Debriefing (students engaged in debriefing after a teaching or assessment activity) Coaching (students were coached on how to improve following a teaching or assessment activity) Written/Automated, (written feedback was provided either asynchronously or synchronously, or answers were given after completing a quiz, or answers/suggestions for improvement were provided online/virtual reality activity)

evaluative judgement to the clinical learning environment is particularly important to support students' clinical judgement (Høegh-Larsen, 2023). As such the starting point was to find the features of evaluative judgement in current clinical teaching and assessment designs.

This systematic scoping review focusses on the teaching and assessment methods used in clinical practice to assist nursing educators and curriculum designers operationalise the concept of evaluative judgement in clinical practice education. The aim was to systematically scope undergraduate and postgraduate tertiary higher education nursing students clinical practice teaching and assessment methods to identify the presence and type of features that align with promoting students' evaluative judgement.

The review question was: "What is known about the inclusion of features of evaluative judgement in undergraduate and postgraduate tertiary higher education nursing students clinical practice teaching and assessment methods"?

The findings from this review will inform educators on clinical practice teaching and assessment methods that may be adapted or replicated to support nursing students to develop evaluative judgement in clinical practice education.

2. Method

The review protocol was registered prospectively with the Open Science Framework DOI 10.17605/OSF.IO/ PYWZ6 and reported using PRISMA guidelines for systematic reviews (Rethlefsen et al., 2021). The review followed the methodology outlined by Peters et al. (2015) for systematic scoping reviews. The review questions were developed using a Population, Concept, Context (PCC) framework.

The concepts evaluative judgement, clinical practice, teaching and assessment methods were developed to search the literature for any evidence of evaluative judgement as an overt or unstated concept of clinical practice teaching and assessment methods.

2.1. Search strategy

Five electronic databases were searched from 1989 to April 27, 2022 (Medline, Scopus, Web of Science, ProQuest and CINAHL) using a peer-reviewed search strategy supported by an academic librarian (Table 3). The search strategy included common terms for all PCC components, including the population and context (lines 1–2), evaluative judgement (line 4), clinical practice (lines 6–7) and teaching and assessment methods (lines 9–11, 13–14). In addition, line 9 of the strategy sought to capture the features of evaluative judgement, including feedback and self-evaluation, judgement, reflection, evaluation and self-assessment. Calibration as an activity is normally embedded in feedback, self-regulation and self-evaluation and was therefore not explicitly included as an individual search term. Wherever possible, both keyword and subject heading searches were completed in the databases. Citations were exported into Covidence© software and duplicates removed.

2.2. Study screening and selection

Two reviewers (BH/FG) screened 10 title and abstract citations independently and then met to discuss and compare interpretation of the eligibility criteria. Following this, the two reviewers independently screened all titles and abstracts. For any citations where the abstract was unavailable, or ambiguity existed, the citation was retained for full text screening. Conflicts were resolved through discussion between the reviewers and a third independent reviewer (LKL). Full text screening was similarly completed by two independent reviewers (BH/FG), with the third independent reviewer (LKL) consulted where conflicts were unable to be resolved.

Table 2
PCC Framework.

ITEMS	OBJECT
Population	Nursing students
Concept 1	Evaluative judgement
Concept 2	Clinical practice
Concept 3	Teaching methods
Concept 4	Assessment methods
Context	University/tertiary higher education

Table 3
Search strategy (Ovid Medline).

	Search Strategy
1	(nurs* adj2 (student* or trainee* or postgrad* or undergrad*)).ti,ab.
2	students, nursing/
3	1 or 2
4	("life long learn*" or "self regulate*" or "sustainable assess*" or "assessment for learning*" or "evaluative judgement").ti,ab
5	3 and 4
6	("clinical practice" or "clinical competency" or "clinical skills" or "psychomotor skills" or "clinical knowledge" or competenc* or skill or ability* or aptitude or performance or capab* or proficien*).ti,ab.
7	Clinical competence/ or Preceptorship/
8	6 or 7
9	(("clinical skill*" or "practical skill*" or "clinical knowledge") adj3 (assess* or judge* or reflect* or regulat* or evaluat* or grade or mark or feedback or "peer review" or "self evaluat*" or "self asses*")).ti,ab
10	("clinical perform*" or "clinical practice" or "competency assessment" or "nurs* assessment*" or survey or report or measure or questionnaire or instrument or tool or scale or report).ti,ab.
11	educations measurement/ or curriculum/ or clinical education/ or nursing, practical/
12	9 or 10 or 11
13	((teach* or learn*) adj2 ("clinical skill*" or "clinical pract*" or pract* or clinical or "psychomotor skill*" or "procedural skill*")).ti,ab
14	Simulation training/ or psychomotor performance/ or nursing, practice/
15	13 or 14
16	5 or (3 and 8 and 12 and 15)

3. Eligibility criteria

3.1. Inclusion

To be included, studies must have used an empirical design (qualitative or quantitative) and have evaluated teaching and/or assessment (formative or summative) of pre-registration (undergraduate) or post-registration (postgraduate) tertiary higher education (university) nursing students' clinical practice. Postgraduate students are registered nurses who have graduated with an entry level nursing qualification and are seeking to further their skills and knowledge in a particular area. The search was limited from 1989 onwards, as the key concept of evaluative judgement was established in the literature by Sadler in 1989. This timeframe was also chosen to capture more contemporary and sustainable approaches to teaching and assessment in nursing clinical practice education. Only English studies were included. Peer-reviewed published studies were selected as they are scrutinised by experts in the field and are recognised as scholarly, scientific and of high quality (Kelly et al., 2014).

Nursing clinical practice was defined as direct and indirect clinical activities. Direct clinical practice activities included any intervention or treatment that was being learnt through patient contact (Kakushi and Martinez Evora, 2014; Lee and Park, 2016) such as taking blood pressure, medication administration, conducting a health or physical assessment and therapeutic communication. Thus, studies that were in a clinical setting, such as a hospital, clinic or surgery were included. Studies that were in a clinical teaching setting that mimicked the real clinical environment, such as simulation with manikins or actors role-playing patients, computer-based low, high or mixed fidelity simulated programs and standardised patient scenarios were also included (Cant and Cooper, 2017). Education around indirect clinical practice activities such as leadership, documentation, or activities on

behalf of the patient in the absence of the patient were also included (Peddle et al., 2019).

3.2. Exclusion

Citations were excluded if they were non-nursing, reported theoretical approaches to clinical practice teaching or assessment, or focused solely on student experiences related to clinical practice placements. Studies reporting on Higher Degree by Research students, or students in vocational programs such as nursing assistants were excluded. All grey literature, theses, reports and conference abstracts / papers were excluded because there is no gold standard approach for rigorous systematic searching of grey literature (Adams et al., 2016; Godin et al., 2015). Grey literature does not go through the peer-review process as such the risk of bias may be higher (Higgins et al., 2011; Wong et al., 2013).

4. Data extraction

Two reviewers (BH & LKL) extracted the data from all eligible articles. Data were extracted including study characteristics, country of origin, aims, student characteristics, educational framework, teaching or assessment method and features of evaluative judgement – discerning quality, judgement process, calibration and feedback. The narrative descriptions and content of the clinical practice teaching and assessing methods were extracted to identify the reported number of features of evaluative judgement, as well as the specific method for delivering each feature, for example, the feature of 'discerning quality' may have been included in a teaching method with the inclusion of written instructions for students as the method of delivery (please refer to Table 1 for examples of methods demonstrating each of the features of developing evaluative judgement).

After data extraction, two authors (BH & LKL) conducted a check to identify any inconsistencies in the data extraction. Inconsistencies were resolved in consultation with the third author (LC).

4.1. Data synthesis

A narrative synthesis was conducted to address the aims of the review, with data from the included studies organised in terms of frequency of occurrence of the features of evaluative judgement (Joanna Briggs Institute, 2022) and exploration of the clinical practice teaching and assessment methods under the framework of the features of evaluative judgement (Table 1). Critical appraisal to determine risk of bias was not completed, as the primary aim of the review related to identifying the features of evaluative judgement in the clinical practice teaching and assessment methods, rather than determining the effectiveness of these methods. Therefore, the appraisal related to appraising each of the teaching or assessment methods against the four features of evaluative judgement (Boud et al., 2018; Boud and Molloy, 2013; Gladovic et al., 2022; Johnson et al., 2016; Tai et al., 2018).

Studies reporting on teaching methods were separated from those reporting on assessment methods. For studies which reported multiple teaching and/or assessment methods, all were examined to determine the presence or absence of methods relating to the features of developing students' evaluative judgement.

5. Results

5.1. Study selection

A total of 3422 records were retrieved from the e-database search. Fig. 1 shows the flow of studies through the review. Following removal of duplicates, 2873 titles and abstracts were screened, followed by 318

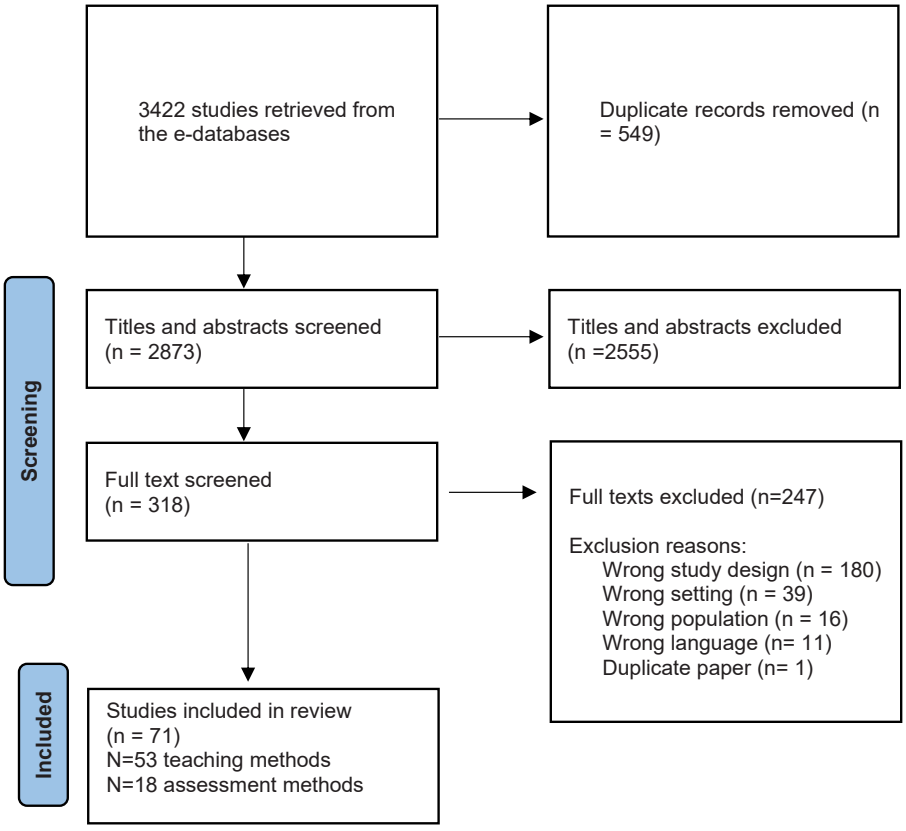

Fig. 1. PRISMA Flow diagram. *Adapted from:* Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71.

full text articles. Seventy-one studies met the eligibility criteria and were included in the review. Of these, 53 included teaching methods in clinical practice education (Appendix 1) and 18 assessment methods in clinical practice education (Appendix 2).

5.2. Study characteristics

The 71 included studies were from the Middle East (n=22), Europe (n=18), Americas (n=16), Asia (n=11) and Australia and Oceania (n=4). Most of the studies (n=49) were published from 2011 to 2020, followed by 19 studies from 2021 to 2022 and three studies from 2000 to 2010. Sixty-one of the included studies included undergraduate (UG) student participants (n=22 1st year, seven=7 2nd year, n=13 3rd year n=2 4th year, n=16 not reported) and eight studies included post-graduate (PG) student participants (n=3 1st year, n=1 2nd year, n=3 not reported). Three further studies (Kielo-Viljamaa et al., 2021; Lee et al., 2020a, 2020b; Sterling-Fox et al., 2020) did not report whether student participants were UG or PG. The mean age of student participants in the included studies was 22 years. For studies which reported multiple teaching and/or assessment methods, data were extracted from the 'main' teaching or assessment method, with alternative methods, either in the same group, or a comparator group, not including information related to any of the features of evaluative judgement.

The results are presented in order of the aims. Data related to teaching methods is presented first followed by data related to assessment methods.

6. Results of individual studies: teaching methods in clinical practice education

Fifty-three of the 71 included studies reported a clinical practice teaching method for UG or PG nursing students (a full description of these studies is included in Appendix 1). Most of these studies used quantitative research designs (n=40), with a further seven qualitative studies and six studies using mixed methods.

The teaching methods included web based and virtual reality gaming (n=15), simulation using high and low fidelity manikins (n=15), simulation using manikins and using video recording for demonstration or self-evaluation of practice (n=14), standardised patients using actors (n=5), clinical skill practice using real patients (n=1), clinical skill practice using peers (n=1), simulation using imagery (n=1), case studies and peer to peer learning (n=1). Teaching activities were conducted face to face only (n= 33), online only (n=11) and both face to face and online (n= 9).

7. Evaluative judgement: teaching methods in clinical practice education

The 53 included studies reporting teaching methods in clinical practice education were evaluated for evidence of demonstrating the features of evaluative judgement, as outlined in Table 1 which were discerning quality, judgement process, calibration and feedback (Boud et al., 2018). A summary of the features and characteristics of evaluative judgement identified in the teaching methods is included in Table 4. The most identified evaluative judgement features in the included studies were discerning quality (n=47), followed by feedback (n=41), judgement process (n=21) and calibration (n=3).

7.1. Discerning Quality: method by which students can identify what quality work looks like

Eighty-seven per cent (n=47) of the studies reporting teaching methods were deemed to include the evaluative judgement feature of 'discerning quality'. These teaching methods provided students with a means to understand the standard that was required. The most common method to assist students with understanding quality work was through demonstration (n=39), followed by standards and protocols, (n=15) and guidelines (n=15). Providing students with instructions was included in 68% of the studies reporting teaching methods. Thirty-six studies (68%) used two or more methods to assist students to understand what was required of them and what quality work looked like. Eleven studies only provided one method. Six studies did not report any method by which students could understand the standard that was required or provide an example of quality work.

7.2. Judgement process: method by which students can judge the quality of their work – before others pass judgement

Forty per cent (n=21) of teaching method studies reported a method by which students could judge their performance before they were given feedback or judged by the clinical educator. The most common methods were self-evaluation (n=13) and peer review (n=12).

7.3. Calibration: if self-evaluation occurred did the educator review the student's self-evaluation to help calibrate them to the required standard

Of the 13 studies which facilitated self-evaluation of clinical practice (identified under the judgement process feature), only three studies provided students with the opportunity to discuss their self-evaluation with a supervisor or educator so they could explore their perspective of performance against what was required.

7.4. Feedback: how did students receive feedback on their performance

Seventy-seven per cent (n=41) of the included teaching method studies reported how feedback was given. The most common methods were debriefing (n=22), written feedback (n=14) and automated feedback (n=10). The least common method for students to receive feedback on their performance was through feedback conversations (n=6).

Three studies reported teaching methods including all of the features to develop students' evaluative judgement (Aggar et al., 2018; Hardie et al., 2021; Smallheer et al., 2017). A further 12 studies included three of the four features for students to develop evaluative judgement (Basak et al., 2019; Chang et al., 2022; Hart et al., 2014; Hernández-Padilla et al., 2016; Higgins et al., 2019; Ravik et al., 2017; Rim and Shin, 2022; Sezgunsay and Basak, 2020; Stayt et al., 2015; Sterling-Fox et al., 2020; Strand et al., 2017; Surabenjawong et al., 2020) most commonly including characteristics relating to discerning quality, judgement process and feedback. The studies which reported three or more of the evaluative judgement features all used simulation laboratories commonly found in most nursing higher education facilities. Two studies (Chang et al., 2022; Rim and Shin, 2022), also reported three features of evaluative judgement for their teaching method which used virtual reality gaming and game-based platforms.

8. Results of individual studies: assessment methods in clinical practice education

Eighteen of the 71 included studies reported an assessment method for pre-registration undergraduate (UG) or post-registration (PG) nursing students. A full description of these studies is included in Appendix 2. Most these studies used quantitative research designs (n=11), with seven using qualitative designs. The assessment methods used were OSCE (n=7), case-based assessments (n=5), simulated and individual skill observation (n= 4), oral viva (n=1), peer assessment (n=1). Assessment activities were conducted face to face (n=14) and (n=4) were online. In terms of resources and time required for the assessment methods in the included studies, 12 used high or low fidelity simulation laboratories and three studies used case-based scenarios online. Two studies used virtual reality computer software to assess students. One study assessed students' clinical skills capability using real patients in the clinical placement setting of the student.

Table 4
Features of evaluative judgement identified in studies of teaching methods in clinical practice education (n=53).

Author	Discerning Quality						Judgement process					Calibration	Feedback					
	Occurred	Standards or protocols	Guide lines	Demonstration	Instructions	Discussion	Occurred	Self-evaluate	Peer review	Comparison with others work	Grade predicting	Occurred	Occurred	Feedback conversation	Debriefing	Coaching	Written	Automated, (e.g quiz)
Aggar, et al. (2018)	Yes	x		x		x	Yes	x	x			Yes	Yes		x			
Aksoy and Pasli Gurdogan 2021	Yes			x	x		Yes	x				No	No					
Ali and John, (2019)	Yes			x			No					No	No					
Arabpur et al. (2022)	Yes	x		x	x		No					No	Yes				x	
Bahar et al. (2017)	Yes			x			No					No	No					
Basak et al. 2018	Yes	x	x	x	x		Yes	x				No	Yes		x		x	
Bayram and Caliskan, (2019)	Yes			x	x		No					No	Yes				x	
Cardoso et al. (2012)	Yes			x			No					No	No					
Carrero-Planells et al. (2021)	Yes			x	x		No					No	Yes		x			
Chang et al. (2022)	Yes	x	x	x	x		Yes			x		No	Yes			x		x
Choi et al. (2021)	Yes			x	x		No					No	Yes	x				x
de Lima Lopes et al. (2019)	Yes			x	x		No					No	No					
Eyikara and Baykara, (2018)	Yes			x	x		No					No	Yes		x			x
Gray et al. (2019)	No						Yes		x			No	Yes		x			
Günay İsmailoğlu and Zaybak, (2018)	Yes			x	x		No					No	Yes				x	
Hardie et al. (2021)	Yes		x			x	Yes	x				Yes	Yes		x			
Hart et al. (2014)	Yes	x	x	x	x		Yes	x				No	Yes	x	x			
Hernández-Padilla et al. (2016)	Yes			x	x		Yes		x	x		No	Yes			x	x	x
Higgins et al. (2019)	Yes	x	x	x			Yes	x	x	x		No	Yes		x			
Hill et al. (2000)	No						Yes	x				No	No					
Holland et al. (2013)	Yes			x	x		Yes		x	x		No	No					
Hošnjak et al. (2019)	Yes			x	x		No					No	Yes				x	
Ismailoğlu et al. 2020	Yes			x			No					No	Yes		x			
Jaberi and Momennasab, (2019)	Yes			x	x		No					No	No					
Johnson et al. (2014)	No						Yes	x				No	Yes					x
Jones et al. (2014)	Yes	x		x	x		No					No	Yes				x	
Keys et al. (2021)	Yes			x			No					No	Yes					x
Kim and Suh, (2018)	Yes			x			No					No	Yes					x
Kim et al. (2017)	Yes	x	x	x	x		No					No	Yes					x
Kurt and Ozturk, (2021)	Yes			x	x		No					No	Yes				x	
Lee et al. (2019)	Yes	x		x			No					No	Yes		x			
McWilliams et al. (2021)	No						Yes		x		x	No	Yes	x	x			
Mehdipour –Rabori et al. (2021)	Yes	x		x	x		No					No	Yes		x	x	x	
Miranda et al. (2017)	Yes		x	x	x		No					No	Yes		x			
Onturk et al. (2019)	Yes		x		x		No					No	Yes		x			x
Oz and Ordu, (2021)	Yes			x	x		No					No	Yes					x
Prentice and O'Rourke, (2013)	Yes				x		No					No	Yes		x			
Rahnavard et al. (2013)	No						No					No	Yes			x		

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Table 4 (*continued*)

Author	Discerning Quality						Judgement process					Calibration	Feedback					
	Occurred	Standards or protocols	Guide lines	Demonstration	Instructions	Discussion	Occurred	Self-evaluate	Peer review	Comparison with others work	Grade predicting	Occurred	Occurred	Feedback conversation	Debriefing	Coaching	Written	Automated, (e.g quiz)
Ravik et al. (2017)	Yes	x	x		x		Yes		x			No	Yes	x	x	x		
Rim and Shin, (2022)	Yes	x	x	x	x		yes	x	x			No	Yes		x		x	
Sarvan and Efe, (2022)	Yes			x	x		No					No	No					
Sezgunsay and Basak, (2020)	Yes	x		x	x		Yes	x				No	Yes		x		x	
Sheahan et al. (2015)	Yes	x	x	x	x	x	No					No	Yes	x	x			
Smallheer et al. (2017)	Yes				x		Yes	x	x			Yes	Yes	x				
Smith and Hamilton, (2015)	No						No					No	No					
Stayt et al. (2015)	Yes	x	x	x			Yes				x	No	Yes				x	
Sterling-Fox et al. (2020)	Yes			x	x		Yes	x	x			No	Yes				x	
Stone et al. (2020)	Yes		x	x	x		No					No	No					
Strand et al. 2016	Yes		x	x	x		Yes	x	x			No	Yes		x			
Surabenjawonget al. 2020	Yes		x	x	x		Yes		x			No	Yes		x			
Tan et al. (2017)	Yes				x		No					No	Yes				x	
Valizadeh et al. 2022	Yes				x		No					No	Yes		x			
Wright et al. (2008)	Yes				x		No					No	No					
Total	47	15	15	39	36	3	21	13	12	5	1	3	41	6	22	5	14	10

Key: Yes = this key feature was identified in the literature X = denotes what method was used.

Table 5
Features of evaluative judgement identified in studies of assessment methods in clinical practice education (n=18).

Author	Discerning Quality							Judgement process					Calibration	Feedback					
	Occurred	Exemplar/ or rubric	Standards or protocols	Guide lines	Demon stration	Instructions	Pre assessment discussion	Occurred	Self-evaluate	Peer review	Comparison with others work	Grade predicting	Occurred	Occurred	Feedback conversation	Debrie fing	Coaching	Written	Automated, (e.g quiz)
Avraham A et al. 2021	Yes					x		Yes	x				Yes	Yes	x	x			
Borg Sapiano et al. (2018)	Yes			x		x		No					No	Yes				x	
Chong et al. (2016)	Yes	x	x	x		x		Yes	x				No	Yes	x				
Cormack et al. (2018)	Yes	x	x			x		Yes	x				Yes	Yes	x	x		x	
Dogru and Aydin, (2020)	Yes	x	x	x	x		x	No					No	Yes			x		
Henderson et al. (2021)	Yes	x						Yes	x				Yes	Yes	x			x	
Kielo-Viljamaa et al. (2021)	Yes					x		No					No	Yes	x	x			
Lee et al., (2020a), (2020b)	Yes	x						No					No	Yes				x	
Lynga et al. (2019)	Yes		x			x		Yes		x			No	Yes			x		
Marquez-Hernandez et al. (2019)	No							No					No	Yes		x			
Meskell et al. (2015)	No							No					No	Yes				x	
Ositadimma Oranye et al. (2012)	yes					x		No					No	No					
Rush et al. (2012)	Yes	x	x	x	x	x		Yes		x			No	Yes		x			
Solheim et al. (2017)	No							Yes	x	x			No	Yes		x			
Unsworth et al. (2016)	Yes					x	x	Yes	x		x		Yes	Yes		x			
Uzellli Yilmaz and Sari 2021	Yes		x	x	x	x		No					No	Yes				x	
Watts et al. (2009)	Yes				x	x		Yes	x				No	No					
Yildiz and Demiray, (2022)	Yes		x			x		No					No	Yes					x
Total	15	6	7	5	4	12	2	9	7	3	1	0	4	16	5	7	2	6	1

Key: Yes = this key feature was identified in the literature X = denotes the method used.

9. Evaluative judgement: assessment methods in clinical practice education

The 18 included studies reporting assessment methods were evaluated for evidence of demonstrating the features of evaluative judgement, including discerning quality, judgement process, calibration and feedback (Boud et al., 2018). A summary of the features and characteristics of evaluative judgement identified in the assessment methods is included in Table 1. The most commonly identified evaluative judgement features in the included studies were feedback (n=16), followed by discerning quality (n=15), judgement process (n=9) and calibration (n=4).

9.1. Discerning Quality: Method by which students can identify what quality work looks like

Eighty-three per cent (n=15) of the studies reporting assessment methods included the evaluative judgement feature of 'discerning quality'. These assessment methods provided students with a means to understand the standard that was required. The most common method to assist students with understanding quality work was through written or verbal instructions (n=12), followed by professional standards or protocols (n=7) and exemplars / marking rubrics, (n=6). The use of pre-assessment discussion, demonstration and guidelines were used less frequently. Fifty-six per cent (n=10) used two or more methods to assist students to understand what was required of them and what quality work looked like. Only four studies provided one method and three studies did not report any method by which students could understand what standard was required and what quality work looks like.

9.2. Judgement process: Method by which students can judge the quality of their work – before others pass judgement

Fifty per cent (n=9) of assessment method studies reported a method by which students could judge their performance before they were given feedback or judged by the clinical educator. The most common methods were self-evaluation (n=7) and peer review (n=3). One study provided opportunity for both self-evaluation and peer review before judgement was given by the clinical educator (Unsworth et al., 2016).

9.3. Calibration: If self-evaluation occurred did the educator review the student's self-evaluation to help calibrate them to the required standard

Of the nine studies which facilitated self-evaluation of clinical practice (identified under the judgement process feature), only four studies provided students with the opportunity to discuss their self-evaluation with a supervisor or educator so they could explore their perspective of performance against what is required.

9.4. Feedback: How did students receive feedback on their performance

Eighty-nine per cent (n=16) of the included assessment method studies reported how feedback was given. The most common methods were debriefing (n=7), written feedback (n=6) and feedback conversations (n=5). The least common method for students to receive feedback on their performance is through coaching and automated methods, e.g., quiz results or computer-generated responses, (n=1).

9.5. Assessment methods with high evaluative judgement components

Four studies reported assessment methods including all of the features to develop students' evaluative judgment (Avraham et al., 2021; Cormack et al., 2018; Henderson et al., 2021; Unsworth et al., 2016). A further three studies included three of the four features for students to develop evaluative judgement (Chong et al., 2016; Lynga et al., 2019; Rush et al., 2012). The most commonly included characteristics related to discerning quality, the judgement process and feedback. Five of the studies which reported three or more of the evaluative judgement features used simulation laboratories commonly found in most nursing higher education facilities. One study (Chong et al., 2016) situated the assessment in the clinical environment using real patients. One study (Henderson et al., 2021) used a simulated scenario online.

10. Discussion

This review aimed to systematically scope pre and post registration nursing clinical practice teaching and assessment methods to identify features that align with promoting students' evaluative judgement.

Implementing the concept of developing evaluative judgment into the teaching and assessment of nursing clinical practice could begin with embedding the four features discerning quality, judgement process, calibration and feedback into higher education curriculum design (Boud et al., 2018). Formative assessment has been identified as a place to introduce the concept of developing evaluative judgment (Tai et al., 2018). However, teaching clinical practice provides many opportunities for students to practice self-evaluation and for educators to engage in calibrating students understanding of quality work and professional standards. Therefore, to isolate developing evaluative judgement only to assessment of clinical practice is a missed opportunity in curriculum design. Fostering students' ability to recognise quality work in their own and others' work is not achieved by introducing a few activities. It requires scaffolding to achieve development over time including multiple opportunities for students to judge themselves and their peers and to be supported by educators who focus on developing students' evaluative judgement as a learning aim (Boud et al., 2018; Soledad Ibarra-Saiz et al., 2020; Yoshida et al., 2023). Most identified studies included some, but not all, of the features believed to promote the capability of evaluative judgment in nursing students.

10.1. Discerning quality

Most of the selected studies provide students with an understanding of what quality work looks like and the standard required to achieve quality work. The first feature discerning quality is important because if students are asked to judge their performance, they need to know what the standard is and what quality work looks like. Providing students with a benchmark to judge their performance in clinical practice teaching methods was most commonly achieved by providing a demonstration. Using video recordings and/or educators to demonstrate the clinical skill. In assessment methods, the most common methods to support students to understand the required standard was written or verbal instructions.

10.2. The judgement process

Providing students with opportunity to self-evaluate and judge themselves against the required standard before the educator provides judgement on their performance is an important step in fostering students' ability to recognise what quality work looks like and if their work is quality work. Developing this skill supports the concepts of reflective practice and life-long learning. Across the included teaching and assessment methods, the feature of 'judgement process' was rarely reported, with students seldom provided an opportunity to judge their own performance. Without a purposeful reflective approach to the judgement process opportunity to refine and explore that judgement is lost.

10.3. Calibration

Of the few studies that reported student self-evaluation, most did not describe whether students were able to discuss this with educators. This may represent a missed opportunity as self-evaluation and calibration is

thought to facilitate students to develop their understanding of quality work (discerning quality). Students who miss this opportunity may continue to over or underestimate their own abilities (Høegh-Larsen et al., 2023). It was interesting that so few of the included teaching and assessment methods incorporated methods to develop students' judgement and calibration of their own performance. Facilitating students to judge and calibrate their own performance takes time and effort from both the student and the clinical educator (Lee et al., 2020a, 2020b). It is possible that methods of developing evaluative judgement were not prioritised due to perceptions of the time and resource burden. However, the seven studies that did include reviewing the students' self-evaluation did not report any additional time or resources.

10.4. Feedback

Most of the selected studies reported that they provided students with feedback. This is in line with most university requirements and existing evidence on the value of feedback for learning (Ajjawi and Boud, 2017; Molloy and Boud, 2012).

Methods of feedback appeared most often in the form of a 'debrief' as expected in the clinical simulation environment. Interestingly the 22 studies that included three or more of the features of evaluative judgement in teaching and assessment activities were simulation based. Clinical simulation can serve as an effective educational method to provide nursing students with experience and learning opportunities in a safe environment. Clinical simulation in nursing most commonly consists of a briefing, simulation conduct and a debriefing (Nyström et al., 2016). Specifically, the debriefing aims to foster students' performance, ability to identify and correct errors, clinical reasoning, decision making and clinical judgement (Dreifuerst, 2009; Fanning and Gaba, 2007). Debriefing has been shown to improve nursing student learning in clinical simulation(Lee et al., 2020a, 2020b), however, effective debriefing methods vary depending on the learning outcomes, the target learner and the context. While debriefs are commonly used in simulation, educators may not always provide students sufficient "air time" to discuss their perceptions of their own performance (Blatt et al., 2008). As most of the included studies did not report how feedback or debriefing were conducted, it was difficult to explore whether students could engage in a 2-way feedback dialogue or if they calibrated their self-evaluation. Simulation using debriefing is well positioned to foster students' evaluative judgement if educators provide opportunities for students to reflect and judge their own performance before judgement is given and for the students' self-evaluation to be calibrated using a bidirectional feedback conversation (Lee et al., 2020).

Learning is a dynamic process where students construct meaning and by engaging in verbal feedback, students can reason and explore through a social interaction with the clinical educator (Carless and Chan, 2017). However, not all feedback is provided as a verbal conversation. This does not suggest that only verbal feedback is effective or can be used to provide students with opportunities to develop their evaluative judgement. The features of developing evaluative judgement include facilitating students to practice recognising what quality work looks like and judging their work, supported by educators, who calibrate their understanding through feedback. Therefore, feedback could be verbal or written and there is no evidence to support one over the other in fostering nursing students' evaluative judgment. From an evaluative judgement lens, a feedback method should enable students to explore and reason with the clinical educator to better understand if their work is quality work and what quality work looks like.

11. Implications

This review has identified that current teaching and assessment methods in nursing clinical practice education have not widely embraced the concept of evaluative judgement in teaching and assessment design. Including the features of "judgement process and calibration" to current teaching and assessment designs has potential to foster and improve students' ability to recognise the value and quality of their work, thus developing their evaluative judgement. There are many implications for future research. This review provides a useful foundation regarding the presence of and methods for delivering each of the features of evaluative judgement in nursing clinical practice teaching and assessment methods. Future research should focus on the effectiveness of different methods of delivery and explore whether some aspects are more effective than others. Such an approach should also consider the views of educators and students, exploring student and educator satisfaction and resources required in the implementation of methods to develop evaluative judgement in nursing clinical practice education.

12. Strengths and limitations

This systematic review had several methodological strengths. A rigorous search strategy was developed, and peer reviewed by an academic librarian and PRISMA reporting guidelines were used (Page et al., 2021). The protocol was registered prospectively. The search was prospectively planned to identify relevant studies from 1989 onwards, as this is when the term 'evaluative judgement' first appeared in the literature. It is possible that this may have resulted in missing studies which may have explored the features of evaluative judgement before this time. However, given there were no relevant studies identified in the decade from 1989 to 1999, we are confident that the findings represent the current evidence for evaluative judgement features in studies reporting contemporary nursing clinical practice teaching and assessment activities. Limitations of the study are linked to the lack of research in nursing on embedding evaluative judgement in educational practice.

13. Conclusions

Many nursing clinical practice teaching and assessment activities in the literature included features that develop students' evaluative judgement, with methods relating to discerning quality and feedback well embedded. Importantly, this review found that the features of judgement process and calibration are rarely conducted and/or reported in nursing clinical practice education. As such students may miss opportunities to self-evaluate and judge their performance. Without this opportunity, it could be argued that students are not practicing reflective or lifelong learning skills both of which are important graduate qualities.

Without addressing the students' evaluation of performance to calibrate their understanding of the quality of their work students are unlikely to improve their judgement process over time and will likely continue to under or overestimate their performance. Embedding the features of evaluative judgement in teaching and assessment design has potential to support students as they transition from student to autonomous professional where they will need to be able to judge the value of their work without an educator providing that judgement for them.

Future research should explore the effectiveness of different clinical practice education approaches that aim to foster students' evaluative judgement and whether incorporating all four features aids student development of evaluative judgement. Future teaching and assessment activities for nursing students should explicitly aim to develop students' evaluative judgement, with a clear need for the development, implementation and evaluation of these activities in the tertiary context, as well as exploring transitions into the workforce.

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix

Appendix 1

Included studies teaching methods in clinical practice education (n=53)

Author/year/country	Design	Aim	Sample UG or PG/year level/n=	Main findings
Aggar et al. (2018) Australia	Quantitative - Quasi-experimental	To examine the effectiveness of a time management intervention using simulation to improve nursing students' preparedness for medication administration in a clinical setting	UG/ 2nd year/ n=92 intervention group n=88 comparison group	The integration of time management and prioritisation strategies into clinical skills learning activities can effectively enhance students' preparedness for and confidence in medication administration in clinical practice
Aksoy and Pasli Gurdogan (2022) Turkey	Quantitative - RCT	Examining effects of the flipped classroom approach on motivation, learning strategies, urinary system knowledge, and urinary catheterization skills of first-year nursing students	UG/1st year/ n=47	The skill and theoretical knowledge levels of the experimental group increased significantly compared to the control group. Test anxiety was lower in the experimental group
Ali and John (2019) Kingdom of Bahrain	Mixed methods - action research methodology	To examine the competency scores of practicing a clinical skill and the satisfaction level of nursing students on three instructional methods	PG/2nd year/n26	Unlimited access to an online self-paced video contributes to increased satisfaction among nursing students compared with other methods of teaching clinical skills but not to contribute significantly to increase their competency levels
Arabpur et al. (2022) Iran	Quantitative - RCT	To compare the effectiveness of demonstration using hybrid simulation versus tasktrainer for training nursing students in using pulse-oximeter and suction following cardiac arrest	UG/2nd year/n=45	The students who did not have an educational intervention did not perform as well as those who had the hybrid simulation and the task trainer simulation
Bahar et al. (2017) Turkey	Quantitative - RCT	To examine the effects of the use of supported educational videos on the nursing student's skills to administer parenteral medication.	UG/1st year/n=80	The experimental group scores were higher than the control group and most of the students who were experimental group were quite satisfied
Basak et al. (2018) Turkey	Quantitative - RCT	To compare the effects of standardized patient and low-fidelity mannequin use in teaching hygiene care	UG/1st year/n=80	The scores, satisfaction and confidence of the students in the experimental group were significantly higher than the control group. The students also felt they transferred the skills to the real setting feeling more prepared
Bayram and Caliskan (2019) Turkey	Quantitative - RCT	Determining the effect of a game-based virtual reality phone application on tracheostomy care education for nursing students	UG/1st year/n=86	The first and last peristomal skin care skill performance scores of the students in the experimental group were higher than those of the control group
Cardoso et al. (2012) Brazil	Quantitative - Quasi-experimental study	To evaluate the effect of a video on the puncture and heparinization of TIAP in the development of cognitive and technical competencies	UG/3rd year/n=24	The use of an educational video with a simulation of puncture and heparinization of TIAP proved to be a strategy that increased both cognitive and technical knowledge
Carrero-Planells et al. (2021) Spain	Mixed-methods study.	To ascertain the degree of student satisfaction and explore how teachers perceive the inclusion of HFS as a teaching method	UG/2nd year/n=91	High-fidelity simulation produces good academic outcomes and is highly satisfying for students and teachers
Chang et al. (2022) Taiwan	A quasi-experimental	investigated integrating online game-based learning with the watch summarize-question strategy to improve nursing students' learning achievement, self-efficacy, learning engagement, and learning satisfaction in sputum suction skill training	UG/1st year/n=24	The experimental group, achieved statistically significant higher learning achievement, self-efficacy, learning engagement, and learning satisfaction than the control group
Choi et al. (2021) South Korea	Mixed methods study	To evaluate Flipped Classrooms feasibility in delivering respiratory system assessment content in a health assessment course and explored the changes in nursing students' perceptions regarding student-centeredness and active learning environments before and after applying FC	UG/2nd year/n=91	Increased student perception of teaching and social presences on their learning environment before and after Flipped Classroom, although these changes were not statistically significant
de Lima Lopes et al. (2019) Brazil	Quantitative - RCT	Test the efficacy of a video-assisted bed bath simulation on improving the performance of psychomotor skills of undergraduate nursing students	UG/2nd year/n=56	Video assisted bed bath simulation is associated with additional improvement of psychomotor skills
Eyikara and Baykara (2018) Turkey	Quantitative	To identify the impact of simulation on first-year nursing students' ability to learn vital signs	UG/1st year/n=90	Simulation had a positive effect on the ability of nursing students to measure vital signs
Gray et al. (2019) Australia	Qualitative exploratory study	To explore the experiences of first and second year nursing students in practicing clinical skills at using the peer-to-peer SNAPS	UG/1st and 2nd year/ n=47	Peer to peer teaching is an effective approach in supporting nursing students to apply and integrate nursing knowledge

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Appendix 1 (*continued*)

Author/year/country	Design	Aim	Sample UG or PG/year level/n=	Main findings
Günay İsmailoğlu and Zaybak (2018) Turkey	Quantitative - RCT	compare the effectiveness of a virtual intravenous simulator with a plastic arm model in teaching intravenous catheter insertion skills to nursing students	UG/2nd year/n=66	The virtual simulator was an effective and reliable teaching tool and contributed to higher levels of student skill and satisfaction and lower levels of fear symptoms
Hardie et al. (2021) Ireland	Mixed methods	To examine what is the student's evaluation of a blended learning strategy that used RLOs and simulation and does the application of online RLOs prepare students for practical simulation	UG/2nd year/n=167	The study supports the use of blended learning that incorporates RLOs and a practice simulation laboratory for medication management teaching and learning
Hart et al. (2014) USA	Quantitative quasi-experimental	To evaluate the effectiveness of a structured education curriculum with simulation to improve performance in recognizing and responding to APD events	UG/1st year/n=48	Findings support that the use of combined teaching strategies is effective in improving students' performance in managing clinical deterioration
Hernández-Padilla et al. (2016) Spain	Quantitative quasi-experimental	To evaluate whether a short simulation-based workshop in radial artery puncture would improve nursing students' competence to a level in which they could practise the procedure on a live patient without compromising patient safety	UG/3rd year/n=86	After the intervention, a total of 61.1% of the participants showed the level of competence required to safely practice radial artery puncture on a live patient under supervision
Higgins et al. (2019) USA	Quantitative - RCT	To compare an online teaching method to traditional face to face teaching of clinical skills	PG/1st year/n=129	The findings of this project, indicate no significant difference in the performance of the students from the two groups
Hill et al. (2000) USA	Quantitative	To determine if video playback would improve performance of psychomotor clinical skills and increase participant satisfaction with the learning process while requiring minimal instructor time	UG/NR/n=21	Results showed improved performance and learner satisfaction
Holland et al. (2013) UK	Mixed methods	To evaluate the use of an online best practice exemplar as an adjunct to the clinical skills	UG/1st year/n=509	Improves student assessment results and satisfaction ratings. Also reported to positively influence all themes identified in Classroom Learning and was perceived to promote the Transfer to Practice of teaching input
Hošnjak et al. (2019) Croatia	Quantitative prospective RCT	To determine how teacher demonstrations and video content affect the development of practical skills in the administration of intravenous therapy by nursing undergraduate students	UG/1st year/n=48	Video demonstrations are an excellent aid for revising already acquired knowledge and skills, but not as the primary means of teaching, without explanation and practice, especially for those students encountering certain skills for the first time
Ismailoğlu et al. (2020) Turkey	Quantitative - RCT	To compare the effect of the virtual simulator and video assisted teaching on the level of intravenous catheterization skills and self-confidence of nursing students	UG/2nd year/n=60	The results suggest that when compared with video teaching, teaching with the VIS contributed to the students' skills while it has no effect on knowledge levels, there was no difference in confidence levels between to two groups
Jaberi and Momennasab (2019) Iran	Quantitative - RCT	to evaluate the effect of using Standardised patients on the performance of nursing students in the physical examination of the abdomen	UG/3rd year/n=87	The study demonstrated that the SP method is as effective as the lecture-based education method in performing the physical Examination. The method was more attractive and enjoyable to the students
Johnson et al. (2014) USA	Quantitative quasi-experimental	Comparing the students' level of knowledge and skill relating to managing acutely ill patients using web based and simulation	PG/NR/NR	Students in the Web training group had significantly higher performance evaluation scores post-training as compared with pre-training evaluation scores
Jones et al. (2014) USA	Quantitative - RCT	To examine the effectiveness of two training methods for peripheral intravenous (IV) cannulation; one using rubber mannequin IV training arms, and the other consisting of students performing the procedure on each other	UG/NR/n=178	The data suggest that using rubber mannequin IV arms for IV skills training may be just as effective as training students using traditional methods
Keys et al. (2021) Canada	Quantitative - RCT	To evaluate the effect of a resuscitation-oriented VSG, when implemented as a pre- simulation preparation adjunct, on the performance of senior level nursing students during an advanced cardiac life support clinical simulation	UG/4th year/n=20	A significant difference in the performance of nursing students undergoing a resuscitation-oriented clinical simulation after having only been provided the VSG for four days
Kim and Suh (2018) South Korea	Quantitative - RCT	To evaluate the effect of an interactive nursing skills mobile application for nursing students	UG/NR/n=66	Nursing knowledge, self-efficacy, and nursing skills performance were enhanced after learning through the use of an ICNS app
Kim et al. (2017) South Korea	Quantitative - RCT	To develop a smartphone-based application and to evaluate the effectiveness of the application	UG/3rd year/n=73	The smartphone-based education group showed significantly higher scores on skills and confidence in performance. Satisfaction with the learning method were higher than for the control group, but the differences were not statistically significant
Kurt and Ozturk (2021) Turkey	Quantitative	To evaluate the effect of Mobile Augmented Reality (MAR) educational materials on the knowledge and skill levels of nursing students on injection practices	UG/1st year/n=122	It was determined that MAR applications had a positive effect on the knowledge and skill levels of nursing students regarding injection practices

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Appendix 1 (*continued*)

Author/year/country	Design	Aim	Sample UG or PG/year level/n=	Main findings
				and provided persistence in the learned knowledge and skills
Lee et al. (2019) Taiwan	Quantitative	To explore the effects of simulation-based learning (SBL) on nursing student competences and performance in the clinical setting	UG/2nd year/n=100	Scores in the intervention groups were consistently higher than those in the control group
McWilliams et al. (2021) USA	Quantitative - RCT	To explore if the learner simulation order (LSO) within the cooperative learning team as 1st, 2nd or 3rd learner, had an impact on nursing students' performance on the haptic IV simulator while learning IV catheter insertion	PG/1st year/n=90	This study indicates that cooperative learning is a useful framework for structuring team learning in clinical simulation context. LSO is an important variable to consider when structuring clinical simulation teams
Mehdipour –Rabori et al. (2021) Iran	Quasi-experimental study	Assess the effect of simulation-based mastery learning on the clinical skills of undergraduate nursing students from 2017 to 2019	UG/3rd year/n=105	Mastery method of teaching was more effective in training clinical skills and these students achieved higher grades
Miranda et al. (2017) Brazil	Quantitative - RCT	To evaluate the effectiveness of a simulated bed bath scenario on improving cognitive knowledge, practical performance and satisfaction among nursing students	UG/NR/n=58	The teaching strategy based on a simulated scenario of a bed bath proved to be effective for the acquisition of cognitive knowledge regarding bed baths in clinical practice and improved student satisfaction with the teaching process
Onturk et al. (2019) Pakistan	Semi-experimental study	To evaluate the effects of simulation techniques on learning outcomes in the teaching of safe drug applications	UG/1st year/n=58	Simulation had a positive effect on learning outcomes
Oz and Ordu (2021) Turkey	Semi-experimental study	To review the effects of Kahoot usage within the framework of web-based education evaluation regarding the intramuscular injection knowledge and skills of nursing students	UG/1st year/n=110	The findings showed that the experimental group had significantly higher mean scores in knowledge scores and skill performance for intramuscular injection
Prentice and O'Rourke (2013) Canada	Quantitative	Quality improvement project to increase student nurses knowledge and skill in caring for clients receiving a blood transfusion	UG/2nd year/n=62	Engaging students in the high-fidelity blood transfusion simulation learning experience increases their knowledge of the process and content related to reacting to these types of patient responses
Rahnavard et al. (2013) Iran	Quantitative	To investigate the effectiveness of the application of the clinical teaching associate (CTA) model in nursing students' clinical skills and to assess the participants' level of satisfaction with the CTA model and with achieving the educational goal	UG/3rd year/n104	The CTA model is an effective method for developing clinical skills in nursing students in Iran as a developing country
Ravik et al. (2017) Norway	Qualitative	Explore, describe and compare learning actions that nursing students used during peripheral vein cannulation training on a latex arm or each other's arms in a clinical skills centre	UG/2nd year/n=9	Nursing students engaged primarily in 'seeking and giving support'. Students training on a latex arm were engaged mainly in student-centred interactions, while those training on each other's arms were involved mainly in teacher-centred
Rim and Shin (2022) Korea	Mixed methods	To develop a multi-user virtual simulation program for metacognition and evaluate the students' satisfaction, clinical judgment, and nursing competencies	UG/NR/n=45	The findings suggest that the use of virtual simulation is effective in enhancing nursing competence by enhancing metacognition
Sarvan and Efe (2022) Turkey	Quantitative - RCT	Determining the impact of integrating serious game simulation (SGS) into neonatal resuscitation training on the neonatal resuscitation related knowledge, skills, satisfaction with training, and self confidence in learning of nursing students	UG/3rd year/n=90	Serious game simulation application used in neonatal resuscitation training was effective in raising the students' ventilation and compression performing skills
Sezgunsay and Basak (2020) Turkey	Quantitative	To investigate the effectiveness of moulage in improving clinical skills of nursing students for the assessment of pressure injury according to Kirkpatrick's model (levels 1–3)	UG/4th year/n=73	Simulation with moulage was effective in improving the skills of nursing students who received training for pressure injury assessment and in transferring what they learned to the clinical setting
Sheahan et al. (2015) Ireland	Quantitative - RCT	To test the effectiveness of teaching clinical skills using a multiple intelligences teaching approach (MITA) compared with the conventional teaching approach	UG/1st year/n=90	The study findings support the use of MITA for clinical skills teaching and advance the understanding of how MI teaching approaches may be used in nursing education
Smallheer et al. (2017) USA	Qualitative	To provide an opportunity for students to engage in a video-recorded peer-to-peer evaluation activity for both physical examination and psychomotor skills checkoffs	UG/NR/n=14	Self- and peer evaluation and reflection through the use of video-recorded student performances provide opportunities for students to learn from their own mistakes in a safe environment
Smith and Hamilton (2015) USA	Quantitative	To evaluate the effectiveness of VR simulation as a teaching strategy for preparation of students for successful performance and validation of Foley catheter insertion by generic associate degree nursing (ADN) students	UG/NR/n=20	Findings from this study support use of virtual reality simulation as a supplemental tool for teaching students' critical steps in clinical skills such as the insertion of a Foley catheter
Stayt et al. (2015) UK	Quantitative - RCT	To explore the effectiveness of clinical simulation in improving the clinical performance of	UG/3rd year/n=98	The intervention group performed significantly better in the post objective structured clinical examination and was

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Appendix 1 (*continued*)

Author/year/country	Design	Aim	Sample UG or PG/year level/n=	Main findings
		recognizing and managing an adult deteriorating patient in hospital		significantly more satisfied with their teaching method. There was no significant difference in the post intervention General Perceived Self Efficacy and Self-Reported Competency scores
Sterling-Fox et al. (2020) USA	Qualitative	To explore an innovative teaching activity of using video selfie to improv psychomotor nursing skills	NR/NR/n=15	Students demonstrated confidence to perform the skills and to accurately list each step required to perform the skills
Stone et al. (2020) Australia	Qualitative	To explore the meaning of undergraduate nursing students' experiences of using video podcast as an adjunct to existing teaching methods in developing confidence in clinical skills	UG/2nd year/n=10	This study provides an insight into the students' engagement with video podcasts in relation to their confidence in clinical skills development, and indicate that students value the use of video podcasts in their learning of clinical skills
Strand et al. (2016) Norway	Qualitative	To get information on how nursing students react to, think about and learn from digital recordings in the skills laboratory as learning and teaching method over time	UG/1st year/n=55	The use of cameras proved to be useful, as an expressive tool for peer learning because video recording enhances self-assessment, reflection, sensing, psychomotor performance and discovery learning
Surabenjawong et al. (2020) Thailand	Quantitative	To evaluate whether peer-to peer teaching is not inferior to standard teaching in basic airway management	UG/NR/n=48	Nursing students trained in basic airway management by the peer-to-peer method did not show inferiority compared with the standard group
Tan et al. (2017) Singapore	Quantitative - RCT	To describe the development and evaluation of a serious game to improve nursing students' knowledge, confidence, and performance in blood transfusion	UG/2nd year/n=111	The study provided evidence on the effectiveness of a serious game in improving the knowledge and confidence of nursing students on blood transfusion practice
Valizadeh et al., (2021) Iran	Quantitative	To compare the effects of role play simulation and demonstration on paediatric PVC insertion skill among baccalaureate nursing students	UG/3rd year/n=45	The findings showed that both demonstration and role play simulation significantly improved paediatric PVC insertion skill among nursing students, but no significant difference was found between these two methods
Wright et al. (2008) UK	Quantitative	To evaluate the effect of PETTLEP-based imagery training on nursing skill performance	UG/NR/n=56	Students who received PETTLEP training for blood pressure measurement performed statistically significantly better than those who did not. The training did not have a statistically significant effect for aseptic techniques

Appendix 2

Included studies assessment methods in clinical practice education (n=18)

Author	Design	Aim	Sample UG or PG/year level/n=	Main findings
Avraham et al. (2021) Israel	Quantitative	To examine the influence of simulation-based learning of the medication administration process, on satisfaction, self-perception of preparedness, and clinical performance of students who practice simulation either individually or in a group	UG/3rd year/ n=128	The simulation experience increased participants' preparedness both when designed for an individual student and for a group of students. The association between simulation performance and clinical performance was mediated by preparedness after simulation in the individual sample, but not in the group sample
Borg Sapiano et al. (2018) Malta	Quantitative	To investigate the effectiveness of virtual simulation in improving student nurses' knowledge and performance during rapid patient deterioration	UG/2nd and 3rd year/ n=335	A statistically significant improvement in the participants' knowledge scores was observed
Chong et al. (2016) Singapore	Quantitative	To examine the use of authentic assessment pedagogy and its impact on the improvements in nursing students' learning domains during clinical practice	UG/1st year/ n=54	The findings confirmed that learning outcomes of the nursing students were enhanced through the early introduction of the authentic assessment pedagogy in the clinical setting
Cormack et al. (2018) USA	Quantitative	To evaluate the effectiveness of implementing a 360 Degree Evaluation of clinical competency of graduate advanced practice nursing students	PG/NR/n=54	The 360 Degree Evaluation Model provided a comprehensive evaluation of the student and critical information for the faculty ensuring individual student and cohort data and ability to analyse cohort themes
Dogru and Aydin (2020) Turkey	Quantitative - RCT	To compare the effectiveness of high-fidelity simulator and traditional teaching method on nursing students' knowledge and skill development in terms of cardiac auscultation and their anxiety levels	UG/1st year/ n=72	The results showed that the use of high-fidelity simulator in nursing education was more effective than traditional method in terms of improving the students' knowledge, skill levels for cardiac auscultation and reducing their anxiety
Henderson et al. (2021) Australia	Qualitative	To explore postgraduate nursing students' perceptions about their experience of online oral viva examination and the use of consensus marking	PG/1st year/ n=13	Students perceived that the online viva creating some anxiety but was relatable to their workplace and they preferred this assessment method to others. Students perceived that consensus marking enabled self-evaluation and reflection provided an opportunity for beneficial critical reflective discussions, and facilitated a positive shift in the power dynamics between the student and assessor

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Appendix 2 (*continued*)

Author	Design	Aim	Sample UG or PG/year level/n=	Main findings
Kielo- Viljamaa et al. (2021) Finland	Qualitative	To describe the development and use of a wound care simulation assessing RNs' and graduating student nurses' practical wound care competence and to describe observations of participants' wound care competence	NR/NR/ n=50	The findings demonstrated competence in consultation, dressing selection, identification of signs of wound infection, and tissue type. Shortcomings were related to pain management, asepsis, bacteria sampling, offloading, and documentation
Lee et al. (2020) Taiwan	Quantitative	To develop and validate a six-station OSCE for evaluating the clinical competency of the student nurses before graduation	UG/3rd year/ n=100	The mean OSCE score of students who passed the registered nurses' examination was significantly higher than that of students who failed. Significant differences in OSCE score between students who remain versus left clinical job were observed at 3, 6 and 9 months after graduation
Lynga et al. (2019) Sweden	Quantitative	To compare OSCE assessments made by student examiners and faculty examiners during the examinations of two clinical skills in undergraduate nurse education	UG/3rdy year/n=148	the level of agreement between student and faculty examiners was high when using an OSCE protocol in clinical examinations of two different clinical skill tasks. The structured checklist (OSCE protocol) was easy to use for the student examiners despite the lack of experience or training in advance
Marquez-Hernandez et al. (2019) Spain	Quantitative	To design, develop and implement a tool to evaluate the clinical skills of nursing students	UG/2nd year/n=250	In the first phase, experts confirmed that the content and technical aspects of the tool were adequate. The participants showed higher final scores in the evaluated skills section, as well as shorter evaluation time and a greater number of observations and registered incidents. The students of indicated a greater degree of satisfaction with the evaluation system used
Meskell et al. (2015) Ireland	Quantitative	To explore electronic OSCE delivery and evaluate the benefits of using an electronic OSCE management system. To explore assessors' perceptions of and attitudes to the computer based package	PG/1st year/ n=230	Assessors' satisfaction with the software was high. Analysis of assessment results can highlight issues around internal consistency being moderate and examiners variability
Ositadimma Oranye et al. (2012) Malaysia	Quantitative	To assess the clinical competence of practising nursing students' through OSCE	PG/NR/ n=311	The findings revealed that 14% of the nurses had level four competence, which indicated that they could perform the tasks correctly and complete. However, 12% failed the OSCE, even though they had more than 10 years experience in nursing and post basic qualifications
Rush et al. (2012) UK	Qualitative	To implement a peer assessment scheme for clinical skills within a skills laboratory and the link between peer assessment and clinical skills development	UG/1st year/ n=NR	Students identified giving and receiving peer feedback, reflection and working with peers in small groups as being particularly valuable in clinical skills learning. Increased confidence was also a dominant finding as was the value of repeated practice in a simulation setting on skills development
Solheim et al. (2017) Norway	Quantitative	To develop a tool for formative assessment with structured concepts for excellent practice of clinical skills to enhance students' learning process. To evaluate use of the formative assessment tool during clinical skills training using high-fidelity simulation	UG/1st year/ n=129	The tool provided a structure for self-assessment and made visible items that are important to be aware of in clinical skills
Unsworth et al. (2016) UK	Quantitative	To explore the discovery of discrepancy between the student's current and perceived optimal performance following participation in simulation exercises	UG/2nd year/n=70	There was also a statistically significant difference in the scores following each simulation session suggesting improved performance
Uzellli Yilmaz and Sari (2021) Turkey	Quantitative - RCT	To examine the effect of simulation-based learning on IV therapy administration knowledge, performance and clinical assessment skills of first-year nursing students	UG/1st year/ n=62	There was a statistically significant difference between groups in terms of knowledge, IV catheter insertion performance in simulation and clinical assessment to classify IV therapy complications on real patients. Satisfaction and self-confidence scale scores were significantly higher. There was no significant difference in simulation design scale scores between the two groups
Watts et al. (2009) Canada	Qualitative	To pilot an approach to self-assessment using video taped self-assessment	UG/1st year/ n=86	Students overrated their performance and assessed themselves more favourably than faculty
Yildiz and Demiray (2022) Turkey	Quantitative	Investigate the use of virtual reality in nursing student training for intravenous catheterization and fluid delivery	UG/NR/ n=52	It was found that virtual reality technology had a positive effect on students' achievement levels in developing intravenous catheterization and fluid delivery application skill

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Appendix 6.4 Included studies teaching methods in clinical practice education (n=53)

Author/year/country	Design	Aim	Sample UG or PG/year level/n=	Main findings
Aggar et al. (2018) Australia	Quantitative - Quasi-experimental	To examine the effectiveness of a time management intervention using simulation to improve nursing students' preparedness for medication administration in a clinical setting	UG/ 2nd year/ n=92 intervention group n=88 comparison group	The integration of time management and prioritisation strategies into clinical skills learning activities can effectively enhance students' preparedness for and confidence in medication administration in clinical practice
Aksoy and Pasli Gurdogan (2021) Turkey	Quantitative - RCT	Examining effects of the flipped classroom approach on motivation, learning strategies, urinary system knowledge, and urinary catheterization skills of first-year nursing students	UG/1st year/ n=47	The skill and theoretical knowledge levels of the experimental group increased significantly compared to the control group. Test anxiety was lower in the experimental group
Ali and John (2019) Kingdom of Bahrain	Mixed methods - action research methodology	To examine the competency scores of practicing a clinical skill and the satisfaction level of nursing students on three instructional methods	PG/2nd year/n26	Unlimited access to an online self-paced video contributes to increased satisfaction among nursing students compared with other methods of teaching clinical skills but not to contribute significantly to increase their competency levels
Arabpur et al. (2022) Iran	Quantitative - RCT	To compare the effectiveness of demonstration using hybrid simulation versus tasktrainer for training nursing students in using pulse-oximeter and suction following cardiac arrest	UG/2nd year/n=45	The students who did not have an educational intervention did not perform as well as those who had the hybrid simulation and the task trainer simulation
Bahar et al. (2017) Turkey	Quantitative - RCT	To examine the effects of the use of supported educational videos on the nursing student's skills to administer parenteral medication.	UG/1st year/n=80	The experimental group scores were higher than the control group and most of the students who were experimental group were quite satisfied
Basak et al. (2018) Turkey	Quantitative - RCT	To compare the effects of standardized patient and low-fidelity mannequin use in teaching hygiene care	UG/1st year/n=80	The scores, satisfaction and confidence of the students in the experimental group were significantly higher than the control group. The students also felt they transferred the skills to the real setting feeling more prepared
Bayram and Caliskan (2019) Turkey	Quantitative - RCT	Determining the effect of a game-based virtual reality phone application on tracheostomy care education for nursing students	UG/1st year/n=86	The first and last peristomal skin care skill performance scores of the students in the experimental group were higher than those of the control group

Cardoso et al. (2012) Brazil	Quantitative - Quasi-experimental study	To evaluate the effect of a video on the puncture and heparinization of TIAP in the development of cognitive and technical competencies	UG/3rd year/n=24	The use of an educational video with a simulation of puncture and heparinization of TIAP proved to be a strategy that increased both cognitive and technical knowledge
Carrero-Planells et al. (2021) Spain	Mixed-methods study.	To ascertain the degree of student satisfaction and explore how teachers perceive the inclusion of HFS as a teaching method	UG/2nd year/n=91	High-fidelity simulation produces good academic outcomes and is highly satisfying for students and teachers
Chang et al. (2022) Taiwan	A quasi-experimental	investigated integrating online game-based learning with the watch summarize-question strategy to improve nursing students' learning achievement, self-efficacy, learning engagement, and learning satisfaction in sputum suction skill training	UG/1st year/n=24	The experimental group, achieved statistically significant higher learning achievement, self-efficacy, learning engagement, and learning satisfaction than the control group
Choi et al. (2021) South Korea	Mixed methods study	To evaluate Flipped Classrooms feasibility in delivering respiratory system assessment content in a health assessment course and explored the changes in nursing students' perceptions regarding student-centeredness and active learning environments before and after applying FC	UG/2nd year/n=91	Increased student perception of teaching and social presences on their learning environment before and after Flipped Classroom, although these changes were not statistically significant
de Lima Lopes et al. (2019) Brazil	Quantitative - RCT	Test the efficacy of a video-assisted bed bath simulation on improving the performance of psychomotor skills of undergraduate nursing students	UG/2nd year/n=56	Video assisted bed bath simulation is associated with additional improvement of psychomotor skills
Eyikara and Baykara (2018) Turkey	Quantitative	To identify the impact of simulation on first-year nursing students' ability to learn vital signs	UG/1st year/n=90	Simulation had a positive effect on the ability of nursing students to measure vital signs
Gray et al. (2019) Australia	Qualitative exploratory study	To explore the experiences of first and second year nursing students in practicing clinical skills at using the peer-to-peer SNAPS	UG/1st and 2nd year/n=47	Peer to peer teaching is an effective approach in supporting nursing students to apply and integrate nursing knowledge
Günay İsmailoğlu and Zaybak (2018) Turkey	Quantitative - RCT	compare the effectiveness of a virtual intravenous simulator with a plastic arm model in teaching intravenous catheter insertion skills to nursing students	UG/2nd year/n=66	The virtual simulator was an effective and reliable teaching tool and contributed to higher levels of student skill and satisfaction and lower levels of fear symptoms

Hardie et al. (2021) Ireland	Mixed methods	To examine what is the student's evaluation of a blended learning strategy that used RLOs and simulation and does the application of online RLOs prepare students for practical simulation	UG/2nd year/n=167	The study supports the use of blended learning that incorporates RLOs and a practice simulation laboratory for medication management teaching and learning
Hart et al. (2014) USA	Quantitative quasi-experimental	To evaluate the effectiveness of a structured education curriculum with simulation to improve performance in recognizing and responding to APD events	UG/1st year/n=48	Findings support that the use of combined teaching strategies is effective in improving students' performance in managing clinical deterioration
Hernández-Padilla et al. (2016) Spain	Quantitative quasi-experimental	To evaluate whether a short simulation-based workshop in radial artery puncture would improve nursing students' competence to a level in which they could practise the procedure on a live patient without compromising patient safety	UG/3rd year/n=86	After the intervention, a total of 61.1% of the participants showed the level of competence required to safely practice radial artery puncture on a live patient under supervision
Higgins et al. (2019) USA	Quantitative - RCT	To compare an online teaching method to traditional face to face teaching of clinical skills	PG/1st year/n=129	The findings of this project, indicate no significant difference in the performance of the students from the two groups
Hill et al. (2000) USA	Quantitative	To determine if video playback would improve performance of psychomotor clinical skills and increase participant satisfaction with the learning process while requiring minimal instructor time	UG/NR/n=21	Results showed improved performance and learner satisfaction
Holland et al. (2013) UK	Mixed methods	To evaluate the use of an online best practice exemplar as an adjunct to the clinical skills	UG/1st year/n=509	Improves student assessment results and satisfaction ratings. Also reported to positively influence all themes identified in Classroom Learning and was perceived to promote the Transfer to Practice of teaching input
Hošnjak et al. (2019) Croatia	Quantitative prospective RCT	To determine how teacher demonstrations and video content affect the development of practical skills in the administration of intravenous therapy by nursing undergraduate students	UG/1st year/n=48	Video demonstrations are an excellent aid for revising already acquired knowledge and skills, but not as the primary means of teaching, without explanation and practice, especially for those students encountering certain skills for the first time
Ismailoğlu et al. (2020) Turkey	Quantitative - RCT	To compare the effect of the virtual simulator and video assisted teaching on the level of intravenous catheterization skills and self-confidence of nursing students	UG/2nd year/n=60	The results suggest that when compared with video teaching, teaching with the VIS contributed to the students' skills

				while it has no effect on knowledge levels, there was no difference in confidence levels between to two groups
Jaberi and Momennasab (2019) Iran	Quantitative - RCT	to evaluate the effect of using Standardised patients on the performance of nursing students in the physical examination of the abdomen	UG/3rd year/n=87	The study demonstrated that the SP method is as effective as the lecture-based education method in performing the physical Examination. The method was more attractive and enjoyable to the students
Johnson et al. (2014) USA	Quantitative quasi-experimental	Comparing the students' level of knowledge and skill relating to managing acutely ill patients using web based and simulation	PG/NR/NR	Students in the Web training group had significantly higher performance evaluation scores post-training as compared with pre-training evaluation scores
Jones et al. (2014) USA	Quantitative - RCT	To examine the effectiveness of two training methods for peripheral intravenous (IV) cannulation; one using rubber mannequin IV training arms, and the other consisting of students performing the procedure on each other	UG/NR/n=178	The data suggest that using rubber mannequin IV arms for IV skills training may be just as effective as training students using traditional methods
Keys et al. (2021) Canada	Quantitative - RCT	To evaluate the effect of a resuscitation-oriented VSG, when implemented as a pre- simulation preparation adjunct, on the performance of senior level nursing students during an advanced cardiac life support clinical simulation	UG/4th year/n=20	A significant difference in the performance of nursing students undergoing a resuscitation-oriented clinical simulation after having only been provided the VSG for four days
Kim and Suh (2018) South Korea	Quantitative - RCT	To evaluate the effect of an interactive nursing skills mobile application for nursing students	UG/NR/n=66	Nursing knowledge, self-efficacy, and nursing skills performance were enhanced after learning through the use of an ICNS app
Kim et al. (2017) South Korea	Quantitative - RCT	To develop a smartphone-based application and to evaluate the effectiveness of the application	UG/3rd year/n=73	The smartphone-based education group showed significantly higher scores on skills and confidence in performance. Satisfaction with the learning method were higher than for the control group, but the differences were not statistically significant
Kurt and Ozturk (2021) Turkey	Quantitative	To evaluate the effect of Mobile Augmented Reality (MAR) educational materials on the knowledge and skill levels of nursing students on injection practices	UG/1st year/n=122	It was determined that MAR applications had a positive effect on the knowledge and skill levels of nursing students regarding injection practices and provided persistence in the learned knowledge and skills

Lee et al. (2019) Taiwan	Quantitative	To explore the effects of simulation-based learning (SBL) on nursing student competences and performance in the clinical setting	UG/2nd year/n=100	Scores in the intervention groups were consistently higher than those in the control group
McWilliams et al. (2021) USA	Quantitative - RCT	To explore if the learner simulation order (LSO) within the cooperative learning team as 1st, 2nd or 3rd learner, had an impact on nursing students' performance on the haptic IV simulator while learning IV catheter insertion	PG/1st year/n=90	This study indicates that cooperative learning is a useful framework for structuring team learning in clinical simulation context. LSO is an important variable to consider when structuring clinical simulation teams
Mehdipour –Rabori et al. (2021) Iran	Quasi-experimental study	Assess the effect of simulation-based mastery learning on the clinical skills of undergraduate nursing students from 2017 to 2019	UG/3rd year/n=105	Mastery method of teaching was more effective in training clinical skills and these students achieved higher grades
Miranda et al. (2017) Brazil	Quantitative - RCT	To evaluate the effectiveness of a simulated bed bath scenario on improving cognitive knowledge, practical performance and satisfaction among nursing students	UG/NR/n=58	The teaching strategy based on a simulated scenario of a bed bath proved to be effective for the acquisition of cognitive knowledge regarding bed baths in clinical practice and improved student satisfaction with the teaching process
Onturk et al. (2019) Pakistan	Semi-experimental study	To evaluate the effects of simulation techniques on learning outcomes in the teaching of safe drug applications	UG/1st year/n=58	Simulation had a positive effect on learning outcomes
Oz and Ordu (2021) Turkey	Semi-experimental study	To review the effects of Kahoot usage within the framework of web-based education evaluation regarding the intramuscular injection knowledge and skills of nursing students	UG/1st year/n=110	The findings showed that the experimental group had significantly higher mean scores in knowledge scores and skill performance for intramuscular injection
Prentice and O'Rourke (2013) Canada	Quantitative	Quality improvement project to increase student nurses knowledge and skill in caring for clients receiving a blood transfusion	UG/2nd year/n=62	Engaging students in the high-fidelity blood transfusion simulation learning experience increases their knowledge of the process and content related to reacting to these types of patient responses
Rahnavard et al. (2013) Iran	Quantitative	To investigate the effectiveness of the application of the clinical teaching associate (CTA) model in nursing students' clinical skills and to assess the participants' level of satisfaction with the CTA model and with achieving the educational goal	UG/3rd year/n104	The CTA model is an effective method for developing clinical skills in nursing students in Iran as a developing country
Ravik et al. (2017) Norway	Qualitative	Explore, describe and compare learning actions that nursing students used during peripheral vein cannulation	UG/2nd year/n=9	Nursing students engaged primarily in 'seeking and giving support'. Students training on a latex arm were engaged mainly in student-centred interactions,

		training on a latex arm or each other's arms in a clinical skills centre		while those training on each other's arms were involved mainly in teacher-centred
Rim and Shin (2022) Korea	Mixed methods	To develop a multi-user virtual simulation program for metacognition and evaluate the students' satisfaction, clinical judgment, and nursing competencies	UG/NR/n=45	The findings suggest that the use of virtual simulation is effective in enhancing nursing competence by enhancing metacognition
Sarvan and Efe (2022) Turkey	Quantitative - RCT	Determining the impact of integrating serious game simulation (SGS) into neonatal resuscitation training on the neonatal resuscitation related knowledge, skills, satisfaction with training, and self confidence in learning of nursing students	UG/3rd year/n=90	Serious game simulation application used in neonatal resuscitation training was effective in raising the students' ventilation and compression performing skills
Sezgunsay and Basak (2020) Turkey	Quantitative	To investigate the effectiveness of moulage in improving clinical skills of nursing students for the assessment of pressure injury according to Kirkpatrick's model (levels 1–3)	UG/4th year/n=73	Simulation with moulage was effective in improving the skills of nursing students who received training for pressure injury assessment and in transferring what they learned to the clinical setting
Sheahan et al. (2015) Ireland	Quantitative - RCT	To test the effectiveness of teaching clinical skills using a multiple intelligences teaching approach (MITA) compared with the conventional teaching approach	UG/1st year/n=90	The study findings support the use of MITA for clinical skills teaching and advance the understanding of how MI teaching approaches may be used in nursing education
Smallheer et al. (2017) USA	Qualitative	To provide an opportunity for students to engage in a video-recorded peer-to-peer evaluation activity for both physical examination and psychomotor skills checkoffs	UG/NR/n=14	Self- and peer evaluation and reflection through the use of video-recorded student performances provide opportunities for students to learn from their own mistakes in a safe environment
Smith and Hamilton (2015) USA	Quantitative	To evaluate the effectiveness of VR simulation as a teaching strategy for preparation of students for successful performance and validation of Foley catheter insertion by generic associate degree nursing (ADN) students	UG/NR/n=20	Findings from this study support use of virtual reality simulation as a supplemental tool for teaching students' critical steps in clinical skills such as the insertion of a Foley catheter
Stayt et al. (2015) UK	Quantitative - RCT	To explore the effectiveness of clinical simulation in improving the clinical performance of recognizing and managing an adult deteriorating patient in hospital	UG/3rd year/n=98	The intervention group performed significantly better in the post objective structured clinical examination and was significantly more satisfied with their teaching method. There was no significant difference in the post intervention General Perceived Self

				Efficacy and Self-Reported Competency scores
Sterling-Fox et al. (2020) USA	Qualitative	To explore an innovative teaching activity of using video selfie to improv psychomotor nursing skills	NR/NR/n=15	Students demonstrated confidence to perform the skills and to accurately list each step required to perform the skills
Stone et al. (2020) Australia	Qualitative	To explore the meaning of undergraduate nursing students' experiences of using video podcast as an adjunct to existing teaching methods in developing confidence in clinical skills	UG/2nd year/n=10	This study provides an insight into the students' engagement with video podcasts in relation to their confidence in clinical skills development, and indicate that students value the use of video podcasts in their learning of clinical skills
Strand et al. (2016) Norway	Qualitative	To get information on how nursing students react to, think about and learn from digital recordings in the skills laboratory as learning and teaching method over time	UG/1st year/n=55	The use of cameras proved to be useful, as an expressive tool for peer learning because video recording enhances self-assessment, reflection, sensing, psychomotor performance and discovery learning
Surabenjawong et al. (2020) Thailand	Quantitative	To evaluate whether peer-to peer teaching is not inferior to standard teaching in basic airway management	UG/NR/n=48	Nursing students trained in basic airway management by the peer-to-peer method did not show inferiority compared with the standard group
Tan et al. (2017) Singapore	Quantitative - RCT	To describe the development and evaluation of a serious game to improve nursing students' knowledge, confidence, and performance in blood transfusion	UG/2nd year/n=111	The study provided evidence on the effectiveness of a serious game in improving the knowledge and confidence of nursing students on blood transfusion practice
Valizadeh et al. (2022) Iran	Quantitative	To compare the effects of role play simulation and demonstration on paediatric PVC insertion skill among baccalaureate nursing students	UG/3rd year/n=45	The findings showed that both demonstration and role play simulation significantly improved paediatric PVC insertion skill among nursing students, but no significant difference was found between these two methods
Wright et al. (2008) UK	Quantitative	To evaluate the effect of PETTLEP-based imagery training on nursing skill performance	UG/NR/n=56	Students who received PETTLEP training for blood pressure measurement performed statistically significantly better than those who did not. The training did not have a statistically significant effect for aseptic techniques

Appendix 6.5 Included studies assessment methods in clinical practice education (n=18)

Author	Design	Aim	Sample UG or PG/year level/n=	Main findings
Avraham et al. (2021) Israel	Quantitative	To examine the influence of simulation-based learning of the medication administration process, on satisfaction, self-perception of preparedness, and clinical performance of students who practice simulation either individually or in a group	UG/3rd year/n=128	The simulation experience increased participants' preparedness both when designed for an individual student and for a group of students. The association between simulation performance and clinical performance was mediated by preparedness after simulation in the individual sample, but not in the group sample
Borg Sapiano et al. (2018) Malta	Quantitative	To investigate the effectiveness of virtual simulation in improving student nurses' knowledge and performance during rapid patient deterioration	UG/2nd and 3rd year/n=335	A statistically significant improvement in the participants' knowledge scores was observed
Chong et al. (2016) Singapore	Quantitative	To examine the use of authentic assessment pedagogy and its impact on the improvements in nursing students' learning domains during clinical practice	UG/1st year/n=54	The findings confirmed that learning outcomes of the nursing students were enhanced through the early introduction of the authentic assessment pedagogy in the clinical setting
Cormack et al. (2018) USA	Quantitative	To evaluate the effectiveness of implementing a 360 Degree Evaluation of clinical competency of graduate advanced practice nursing students	PG/NR/n=54	The 360 Degree Evaluation Model provided a comprehensive evaluation of the student and critical information for the faculty ensuring individual student and cohort data and ability to analyse cohort themes
Dogru and Aydin (2020) Turkey	Quantitative - RCT	To compare the effectiveness of high-fidelity simulator and traditional teaching method on nursing students' knowledge and skill development in terms of cardiac auscultation and their anxiety levels	UG/1st year/n=72	The results showed that the use of high-fidelity simulator in nursing education was more effective than traditional method in terms of improving the students' knowledge, skill levels for cardiac auscultation and reducing their anxiety
Henderson et al. (2021) Australia	Qualitative	To explore postgraduate nursing students' perceptions about their experience of online oral viva examination and the use of consensus marking	PG/1st year/n=13	Students perceived that the online viva creating some anxiety but was relatable to their workplace and they preferred this assessment method to others. Students perceived that consensus marking enabled self-evaluation and reflection provided an opportunity for beneficial critical reflective discussions, and facilitated a positive shift in the power dynamics between the student and assessor
Kielo- Viljamaa et al. (2021) Finland	Qualitative	To describe the development and use of a wound care simulation assessing RNs' and graduating student nurses'	NR/NR/n=50	The findings demonstrated competence in consultation, dressing selection, identification of signs of wound infection, and tissue type.

		practical wound care competence and to describe observations of participants' wound care competence		Shortcomings were related to pain management, asepsis, bacteria sampling, offloading, and documentation
Lee et al. (2020) Taiwan	Quantitative	To develop and validate a six-station OSCE for evaluating the clinical competency of the student nurses before graduation	UG/3rd year/n=100	The mean OSCE score of students who passed the Registered nurses' examination was significantly higher than that of students who failed. Significant differences in OSCE score between students who remain versus left clinical job were observed at 3, 6 and 9 months after graduation
Lynga et al. (2019) Sweden	Quantitative	To compare OSCE assessments made by student examiners and faculty examiners during the examinations of two clinical skills in undergraduate nurse education	UG/3rdy year/n=148	the level of agreement between student and faculty examiners was high when using an OSCE protocol in clinical examinations of two different clinical skill tasks. The structured checklist (OSCE protocol) was easy to use for the student examiners despite the lack of experience or training in advance
Marquez- Hernandez et al. (2019) Spain	Quantitative	To design, develop and implement a tool to evaluate the clinical skills of nursing students	UG/2nd year/n=250	In the first phase, experts confirmed that the content and technical aspects of the tool were adequate. The participants showed higher final scores in the evaluated skills section, as well as shorter evaluation time and a greater number of observations and registered incidents. The students of indicated a greater degree of satisfaction with the evaluation system used
Meskell et al. (2015) Ireland	Quantitative	To explore electronic OSCE delivery and evaluate the benefits of using an electronic OSCE management system. To explore assessors' perceptions of and attitudes to the computer based package	PG/1st year/n=230	Assessors' satisfaction with the software was high. Analysis of assessment results can highlight issues around internal consistency being moderate and examiners variability
Ositadimma Oranye et al. (2012) Malaysia	Quantitative	To assess the clinical competence of practising nursing students' through OSCE	PG/NR/n=311	The findings revealed that 14% of the nurses had level four competence, which indicated that they could perform the tasks correctly and complete. However, 12% failed the OSCE, even though they had more than 10 years experience in nursing and post basic qualifications
Rush et al. (2012) UK	Qualitative	To implement a peer assessment scheme for clinical skills within a skills laboratory and the link between peer assessment and clinical skills development	UG/1st year/n=NR	Students identified giving and receiving peer feedback, reflection and working with peers in small groups as being particularly valuable in clinical skills learning. Increased confidence was also a dominant finding as was the value of repeated practice in a simulation setting on skills development

Solheim et al. (2017) Norway	Quantitative	To develop a tool for formative assessment with structured concepts for excellent practice of clinical skills to enhance students' learning process. To evaluate use of the formative assessment tool during clinical skills training using high-fidelity simulation	UG/1st year/n=129	The tool provided a structure for self-assessment and made visible items that are important to be aware of in clinical skills
Unsworth et al. (2016) UK	Quantitative	To explore the discovery of discrepancy between the student's current and perceived optimal performance following participation in simulation exercises	UG/2nd year/n=70	There was also a statistically significant difference in the scores following each simulation session suggesting improved performance
Uzellli Yilmaz and Sari (2021) Turkey	Quantitative - RCT	To examine the effect of simulation-based learning on IV therapy administration knowledge, performance and clinical assessment skills of first-year nursing students	UG/1st year/n=62	There was a statistically significant difference between groups in terms of knowledge, IV catheter insertion performance in simulation and clinical assessment to classify IV therapy complications on real patients. Satisfaction and self-confidence scale scores were significantly higher. There was no significant difference in simulation design scale scores between the two groups
Watts et al. (2009) Canada	Qualitative	To pilot an approach to self-assessment using video taped self-assessment	UG/1st year/n=86	Students overrated their performance and assessed themselves more favourably than faculty
Yildiz and Demiray (2022) Turkey	Quantitative	Investigate the use of virtual reality in nursing student training for intravenous catheterization and fluid delivery	UG/NR/n=52	It was found that virtual reality technology had a positive effect on students' achievement levels in developing intravenous catheterization and fluid delivery application skill

Appendix 7.1 Authorship Declaration

Office of Graduate Research
Room 003, Registry Building
Bedford Park, SA 5042
GPO Box 2100, Adelaide 5001 Australia
Email: hdrexams@flinders.edu.au
Phone: (08) 8201 3854
Website: https://students.flinders.edu.au/my-course/hdr
CRICOS Provider: 00114A

CO-AUTHORSHIP APPROVALS FOR HDR THESIS FOR EXAMINATIONS

In accordance with Clause 5, 7 and 8 in the HDR Thesis Rules, a student must sign a declaration that the thesis does not contain any material previously published or written by another person except where due reference is made in the text or footnotes. There can be no exception to this rule.

a. Publications or significant sections of publications (whether accepted, submitted or in manuscript form) arising out of work conducted during candidature may be included in the body of the thesis, or submitted as additional evidence as an appendix, on the following conditions:
   I. they contribute to the overall theme of the work, are conceptually linked to the chapters before and after, and follow a logical sequence
   II. they are formatted in the same way as the other chapters (i.e. not presented as reprints unless as an appendix), whether included as separate chapters or integrated into chapters
   III. they are in the same typeface as the rest of the thesis (except for reprints included as an appendix)
   IV. published and unpublished sections of a chapter are clearly differentiated with appropriate referencing or footnotes, and
   V. unnecessary repetition in the general introduction and conclusion, and the introductions and conclusions of each published chapter, is avoided.

b. Multi-author papers may be included within a thesis, provided:
   I. the student is the primary author
   II. there is a clear statement in prose for each publication at the front of each chapter, recording the percentage contribution of each author to the paper, from conceptualisation to realisation and documentation.
   III. The publication adheres to Flinders Research Publication, Authorship and Peer Review Policy, and
   IV. each of the other authors provides permission for use of their work to be included in the thesis on the form below.

c. Papers where the student is not the primary author may be included within a thesis if a clear justification for the paper's inclusion is provided, including the circumstances relating to production of the paper and the student's position in the list of authors. However, it is preferable to include such papers as appendices, rather than in the main body of the thesis.

STUDENT DETAILS

Student Name	Bridget Henderson
Student ID	2082153
College	College of Nursing & Health Sciences
Degree	PhD
Title of Thesis	Developing nursing students' evaluative judgement: exploring the pedagogical concept in nursing education

CO-AUTHORSHIP APPROVALS FOR HDR THESIS EXAMINATION

PUBLICATION 4

This section is to be completed by the student and co-authors. If there are more than four co-authors (student plus 3 others), only the three co-authors with the most significant contributions are required to sign below.

Please note: A copy of this page will be provided to the Examiners.

Full Publication Details	Exploring student, academic and clinical educator perspective of feedback as a process to develop nursing students' evaluative judgement in clinical practice education: a qualitative study
Section of thesis where publication is referred to	Chapter 6 pages 159-194

Student's contribution to the publication

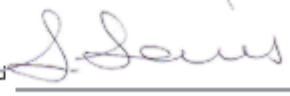
80	%	Research design
75	%	Data collection and analysis
75	%	Writing and editing

Outline your (the student's) contribution to the publication:

Bridget Henderson contributed to the conceptualisation of the research questions and research design with input from the supervisory team. Bridget Henderson conducted the data collection and analysis. The supervisory team provided input into the data collection and analysis. Bridget Henderson completed the initial draft of the manuscript. All authors edited multiple revisions of the manuscript.

APPROVALS

By signing the section below, you confirm that the details above are an accurate record of the students contribution to the work.

Name of Co-Author 1	Lucy Lewis	Signed		Date	19/09/2024
Name of Co-Author 2	Lucy Chipchase	Signed		Date	20/09/2024
Name of Co-Author 3	Robyn Aitken	Signed		Date	26/09/2024

Appendix 7.2 Ethics Approval

HUMAN ETHICS LOW RISK PANEL APPROVAL NOTICE

Dear Mrs Bridget Henderson,

The below proposed project has been **approved** on the basis of the information contained in the application and its attachments.

Project No: 5806

Project Title: Fostering evaluative judgement and building an educational alliance: codesigning a clinical feedback method.

Chief Investigator: Mrs Bridget Henderson

Approval Date: 21/12/2022

Expiry Date: 18/12/2023

Approved Co-Investigator/s: Professor Lucy Lewis, Professor Lucy Chipchase,

Professor Robyn Aitken **Supervisory Panel:** Professor Lucy Chipchase, Professor

Robyn Aitken, Professor Lucy Lewis **Conditions of Approval:** None

Please note: *Due to COVID-19, researchers should try to avoid face-to-face testing where possible and consider undertaking alternative distance/online data or interview collection means. For further information, please go to https://staff.flinders.edu.au/coronavirus-information.*

Please note: *For all research projects wishing to recruit Flinders University students as participants, approval needs to be sought from the Office to the Deputy Vice-Chancellor (Students). To seek approval, please provide a copy of the Ethics approval for the project and a copy of the project application (including Participant Information and Consent Forms, advertising materials and questionnaires etc.) to the Office of the Deputy Vice-Chancellor (Students) via dvcsoffice@dl.flinders.edu.au.*

RESPONSIBILITIES OF RESEARCHERS AND SUPERVISORS

Participant Documentation

Please note that it is the responsibility of researchers and supervisors, in the case of student projects, to ensure that:

- all participant documents are checked for spelling, grammatical, numbering and formatting errors. The Committee does not accept any responsibility for the above mentioned errors.

- the Flinders University logo is included on all participant documentation (e.g., letters of Introduction, information Sheets, consent forms, debriefing information and questionnaires – with the exception of purchased research tools) and the current Flinders University letterhead is included in the header of all letters of introduction. The Flinders University international logo/letterhead should be used and documentation should contain international dialing codes for all telephone and fax numbers listed for all research to be conducted overseas.

Annual Progress / Final Reports

In order to comply with the monitoring requirements of the *National Statement on Ethical Conduct in Human Research 2007 (updated 2018)* an annual progress report must be submitted each year on the approval anniversary date for the duration of the ethics approval using the HREC Annual/Final Report Form available online via the ResearchNow Ethics & Biosafety system. Please note that no data collection can be undertaken after the ethics approval expiry date listed at the top of this notice. If data is collected after expiry, it will not be covered in terms of ethics. It is the responsibility of the researcher to ensure that annual progress reports are submitted on time; and that no data is collected after ethics has expired.

If the project is completed before ethics approval has expired please ensure a final report is submitted immediately. If ethics approval for your project expires please either submit (1) a final report; or (2) an extension of time request (using the HREC Modification Form).
For student projects, the Low Risk Panel recommends that current ethics approval is maintained until a student's thesis has been submitted, assessed and finalised. This is to protect the student in the event that reviewers recommend that additional data be collected from participants.

3.Modifications to Project
Modifications to the project must not proceed until approval has been obtained from the Ethics Committee. Such proposed changes / modifications include:
change of project title;
change to research team (e.g., additions, removals, researchers and supervisors) changes to research objectives;
changes to research protocol;
changes to participant recruitment methods;
changes / additions to source(s) of participants;
changes of procedures used to seek informed consent; changes to reimbursements provided to participants;
changes to information / documents to be given to potential participants;
changes to research tools (e.g., survey, interview questions, focus group questions etc); extensions of time (i.e. to extend the period of ethics approval past current expiry date).
To notify the Committee of any proposed modifications to the project please submit a Modification Request Form available online via the ResearchNow Ethics & Biosafety system. Please note that extension of time requests should be submitted prior to the Ethics Approval Expiry Date listed on this notice.

4.Adverse Events and/or Complaints
Researchers should advise the Executive Officer of the Human Research Ethics Committee on at human.researchethics@flinders.edu.au immediately if:
any complaints regarding the research are received;
a serious or unexpected adverse event occurs that effects participants;
an unforeseen event occurs that may affect the ethical acceptability of the project.

Yours sincerely, Camilla Dorian on behalf of
Human Ethics Low Risk Panel Research Development and Support human.researchethics@flinders.edu.au

Flinders University
Sturt Road, Bedford Park, South Australia, 5042 GPO Box 2100, Adelaide, South Australia, 5001
http://www.flinders.edu.au/research/researcher-support/ebi/human-ethics/human-ethics_home.cfm

Appendix 7.3 Consent Form

CONSENT FORM – Academics and Clinical Educators

Fostering evaluative judgement and building an educational alliance: codesigning a clinical feedback method. Project number 5806

CONSENT FORM

Consent Statement

☐ I have read and understood the information about the research, and I understand I am being asked to provide informed consent to participate in this research study. I understand that I can contact the research team if I have further questions about this research study.

☐ I am not aware of any condition that would prevent my participation, and I agree to participate in this project.

☐ I understand that I am free to withdraw at any time during the study.

☐ I understand that I can contact Flinders University's Research Ethics & Compliance Office if I have any complaints or reservations about the ethical conduct of this study.

☐ I understand that my involvement is confidential, and that the information collected may be published. I understand that I will not be identified in any research products.

☐ I understand that I will be unable to withdraw my data and information from this project. I also understand that this data **will be used** for this research study.

I further consent to:

☐ completing a questionnaire

☐ participating in two workshops

☐ my data and information being used in this project and other related projects for an extended period of time (no more than 5 years after publication of the data)

Appendix 7.4 Participant Information

PARTICIPANT INFORMATION SHEET

Title: Fostering evaluative judgement and building an educational alliance: codesigning a clinical feedback method.

Chief Investigator

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Description

This project will investigate key stakeholders experience and ideas about how feedback is delivered to and received by students on their clinical practice. Also, to work with key stakeholders to explore a new method of delivering feedback that fosters an educational alliance and develop students' evaluative judgement.
This project is supported by Flinders University College of Nursing and Health Sciences.

Purpose of the study

The aim of this study is to engage stakeholders to codesign a feedback method that provides nursing students with opportunities to self-evaluate and engage in a feedback dialogue to develop their evaluative judgement in clinical practice.

Benefits of the study

The sharing of your experience will help in the development, implementation, and evaluation of a method of delivering feedback to students who are on clinical placement or in clinical laboratories that supports the development of self-evaluation and creates a feedback dialogue

Participant involvement and potential risks

If you agree to participate in this research project you will be asked to complete an online questionnaire that will ask you questions about you, your experience of clinical education and feedback methods. Also, to engage in 2 (two hour long) workshops with other participants to review current feedback methods used in clinical education and working in groups to design a feedback method that helps to develop students' ability to self-evaluate their performance and engage in a feedback dialogue with their clinical educator. If you consent to participate the research team will send you an email with details of the time and venue of the workshops.

The researchers do not expect the online questions or participation in the workshops to cause any harm or discomfort to you. However, if you experience feelings of distress because of participation in this study, please let the research team know immediately. You can also contact the following services for support:

- Lifeline – 13 11 14, www.lifeline.org.au
- Beyond Blue – 1300 22 4636, www.beyondblue.org.au

Withdrawal Rights

You may decline to take part in this research study. If you decide to take part and later change your mind, you may, withdraw at any time without providing an explanation. To withdraw, please contact the Chief Investigator or you may leave the workshop and not participate in exercises at any time. Any data collected during the workshop may not be able to be destroyed, therefore, any data generated by you up to the point that you withdraw will be used in the research project.

Confidentiality and Privacy

Only researchers listed on this form have access to the individual information provided by you. Privacy and confidentiality will be assured at all times. The research outcomes may be presented at conferences, written up for publication or used for other research purposes. However, the privacy and confidentiality of individuals will be protected at all times. You will not be named, and your individual information will not be identifiable in any research products.
No data, including identifiable, non-identifiable and de-identified datasets, will be shared or used in future research projects without your explicit consent.

Data Storage
The information collected may be stored securely on a password protected computer and/or Flinders University server throughout the study. Any identifiable data will be de-identified for data storage purposes unless indicated otherwise. All data will be securely transferred to and stored at Flinders University for five years after publication of the results. Following the required data storage period, all data will be securely destroyed according to university protocols.
Recognition of Contribution / Time / Travel costs
If you would like to participate, in recognition of your contribution and participation time, you will be provided with a $60.00 Coles/Myer voucher. After completing the online questionnaire and participating in both workshops. The voucher will be provided to you face-to-face by the workshop facilitator at the end of workshop 2. Light refreshment (tea, coffee) will be provided during the workshops.
How will I receive feedback?

On project completion, a short summary of the outcomes will be provided to all participants via email or published on Flinders University's website.

Ethics Committee Approval
The project has been approved by Flinders University's Human Research Ethics Committee Project number 5806

Queries and Concerns
Queries or concerns regarding the research can be directed to the research team. If you have any complaints or reservations about the ethical conduct of this study, you may contact the Flinders University's Research Ethics & Compliance Office team via telephone 08 8201 2543 or email human.researchethics@flinders.edu.au.

Thank you for taking the time to read this information sheet which is yours to keep. If you accept our invitation to be involved, please sign the Consent Form.