An evaluation of a pilot peer mentor project for first year undergraduate nursing students:

A Participatory Action Research study

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Certificate of authorship

'I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgment is made in the thesis. Any contribution made to the research by colleagues with whom I have worked at Charles Sturt University or elsewhere during my candidature is fully acknowledged'.

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Publications resulting from the research

Publications resulting from the research

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I, Marguerite Bramble, agree to the inclusion of this paper in the thesis

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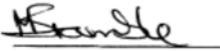
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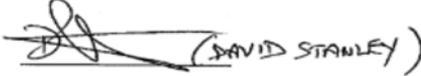
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Abstract

Background: Peer mentoring is effective in aiding the transition of new students to tertiary study and brings benefits to mentors. Students with high levels of self- efficacy are viewed as more likely to succeed at university. There are limited studies that explore the relationship between a peer mentor program, self-efficacy, and student retention in undergraduate nursing students. A peer mentor program may create conditions that improve student self-efficacy and student retention; however, this has not been established conclusively.

Research aim: The aim of this six phase Participatory Action Research (PAR) project was to examine whether a pilot peer mentor project (PPMP) within an undergraduate nursing degree improves student self-efficacy and retention.

Method: The planning, implementation, and evaluation of the PPMP occurred within cycles of action and review. The stages of review included feedback, reflection, and refinements to the project plan prior to moving onto the next stage Reflexivity was required as the PPMP evolved in response to feedback from participants.

Results: The self-efficacy of mentees increased during session one of the PPMP. Feedback from mentors suggested that five mentees were retained in the Bachelor of Nursing degree due to the support they received from their mentor. Themes from qualitative data highlight the positive experiences of mentees in the PPMP, explore the barriers to effective mentor/mentee relationships, and refocussing a future peer mentor program to capitalise on the insight that mentors have into the Bachelor of Nursing degree

Recommendations: The PPMP provides a comprehensive guide of how to undertake a peer mentor program in an undergraduate tertiary context. The recommendations for a future peer mentor program encompass extending the role of mentors into clinical tutoring and the positioning of Facebook as the primary mechanism for communication between mentors and mentees.

Glossary of key terms and abbreviations

Action Research	Action Research investigates an area of concern to an individual or group with the intent of facilitating change in practice or producing theory. It involves cycles of investigation, planning and evaluation in an environment of collaboration and reflexivity (Lewin, 1946; Pain et al., 2011).
Attrition	Attrition, which may be viewed as the opposite of retention is defined by the Tertiary Education Quality and Standards Agency (June 2017, p. 8) as "the ratio of first year higher education students in a year who neither completed nor returned to study in the following year, to the total commencing students in that year… in courses at all levels".
Bachelor of Nursing	The Bachelor of Nursing (BN) is the title of the undergraduate nursing degree at Charles Sturt University.
CICO	Check-in, check-out process.
Community of Inquiry	A Community of Inquiry (CoI) is an online community focussed on deep learning. This is achieved through teaching activities that are closely aligned with learning outcomes. The presence of an academic to guide learners is pivotal. Learners are encouraged to be collaborative and reflective as they interact with the academic and each other (Mills et al., 2016).
Community of Practice	Community of Practice (CoP) is a social learning theory that describes groups of people who meet regularly with a common interest or goal and an intention to improve their knowledge or skills. Communities of Practice are characterised by collaboration, sharing of stories and a sense of striving towards a common goal (Wenger - Trayner & Wenger - Trayner, 2015).
Cooperative Inquiry	Cooperative Inquiry shares with Action Research an intent to improve knowledge and change practice through a series of cycles of planning, reflection, and action. Cooperative Inquiry purports to have an extended epistemology not shared by Action Research comprising four ways of knowing: propositional, practical, presentational and experiential (Heron, 2014; Heron & Reason, 2008).
CSU	Charles Sturt University, also referred to as "Charles Sturt" and the "University".

Engagement	The commitment shown by students to activities with an educational basis that contribute to them achieving personal goals in relation to university study (Kuh et al., 2008).
Equity group	Equity groups are known to be historically disadvantaged or underrepresented student populations and commonly include, but are not limited to: "Aboriginal and Torres Strait islander peoples, people from lower socio-economic backgrounds, people with disability, people from remote, rural or isolated areas, people who are first in their family to attend university, people from non-English speaking backgrounds, and women in areas of study where they have been under-represented" (Tertiary Education Quality and Standards Agency, 2017, p. 3).
First in family student	Definitions vary, but students who are first in family have parents who did not attend university. First in family students can also be referred to as first generation students (Spiegler & Bednarek, 2013).
Mentee	In the context of this study, a mentee is a first-year undergraduate nursing student receiving mentoring from a second or third year undergraduate nursing student.
Mixed - mode	Units of study undertaken in a mix of on-campus and on-line delivery in one session. For example, a student may enrol in 2 units delivered on-campus and enrol in another unit via on-line delivery.
Peer Mentor	In this study, a mentor is a second or third year undergraduate nursing student providing practical support and guidance on adapting to university life and the Bachelor of Nursing degree.
PMP	Peer Mentor Program
Near-peer teacher	A subset of peer assisted learning, near-peer teaching is an undergraduate nursing student providing educational support in a tutorial or clinical laboratory setting to a more junior undergraduate nursing student (Irvine et al., 2017).
Participatory Action Research (PAR)	PAR is included under the broad umbrella of Action Research methodologies. The primary characteristics are a democratic, collaborative approach to knowledge creation or facilitating change as outcomes of the research process (Hummelvoll & Severinsson, 2005).

Peer	An individual who is the same age or has the same broad level or knowledge, competence of social standing as another member of the same group ("Peer," 2021).
Pilot study	The purpose of a pilot or feasibility study is not to test a research hypothesis, rather, it is to test the approach of an intended larger future study. The intent of a pilot study is to identify and remedy future problems in a broad range of areas including refining the research question, aims and outcomes, all aspects of the study method, human and material resources and logistical issues (Rutherford - Hemming, 2018).
PPMP	Pilot Peer Mentor Project.
Professional identity	In the context of this study, professional identity is an individual's concept of what it is to think and act as a nurse.
Professional socialisation	Professional socialisation describes a multifaceted process whereby the knowledge, skills and behaviour inherent to the profession are learned and professional identity which characterises a member of that profession forms (Mariet, 2016).
Resilience	"A mechanism that reduces the negative effects of challenging life situations", enabling adaptation and recovery from difficult circumstances. A person's self-efficacy contributes to their level of resilience (Bates & Miles-Johnson, 2010, p. 2).
Retention	Retention in the context of higher education is defined as "the continuation of the education of students in the subsequent year until completion" (Adusei-Asante & Doh, 2016). In the context of the PPMP, retention is viewed as the number of mentees who indicated that they remained in the Bachelor of Nursing degree at Charles Sturt due to their participation in the PPMP.
Self-efficacy	Bandura (1977, p. 193) defined self-efficacy as, "the strength of an individual's convictions that they can function successfully in challenging situations to achieved desired outcomes". Gallagher (2012) clarifies that self-efficacy is not outcome based, but an individual's evaluation that they can do what needs to be done if required, but unrelated to an individuals' interest in pursuing a goal.
Self-esteem	Self-esteem refers to the "extent in which one values and prizes the self" (Kille & Wood, 2012, p. 321). Self-esteem is self-evaluation related to a

	wide variety of concepts and comprises perceptions about personal characteristics such as history, physical appearance, intellectual capacity and behaviour (Stajkovic & Luthans, 2002).
Session	The equivalent of a university semester.
Simulation	"An educational strategy in which a particular set of conditions are created or replicated to resemble authentic situations that are possible in real life" (International Association for Clinical Simulation and Learning Standards Committee, 2016).
Social media	Internet based applications that enable users to create and share content such as Facebook, Twitter, blogs, wikis, and podcasts . Definitions focus on Web 2.0 as the ideological and technological underpinning of social media (Milton, 2014).
Transition	In the context of this study, the period of change and instability at the commencement of tertiary education where new students adapt successfully or not to the academic and social life of university (Hughes et al., 2020).

Chapter One – Background to the study

1.0   Introduction

This chapter introduces the Pilot Peer Mentor Project (PPMP) and describes the organisation of this thesis. Firstly, the candidate's interest in mentoring, which originated in early professional experiences, is explained. An overview of the PPMP places the study in the context of a regional, multi-campus Australian university, Charles Sturt University, (also referred to as CSU, Charles Sturt, or the University). The pre-suppositions of the candidate are briefly discussed. The chapter then concludes with a brief overview of each chapter of the thesis.

1.1   Call to the question

In 1987 the first cohort of the Diploma of Applied Science (Nursing) graduated from Charles Sturt University. Nursing had transitioned from hospital training programs to tertiary diploma and degree programs undertaken in Colleges of Advanced Education and universities. This was the catalyst I believe, for a temporary but significant divide between hospital trained and university educated graduates. By the time I graduated from Charles Sturt in 1992, I had been a witness to many discussions and the recipient of much advice on how to "survive" in the hospital system after graduation, where it appeared that young graduates were too often greeted with ambivalence and sometimes outright hostility. Survival tips as I recall did not include finding a professional mentor. As a young woman of twenty, having simultaneously commenced a new career and left home for the first time, I would have benefitted enormously from mentoring. I was unworldly, lacked focus and had little understanding of how to navigate the culture of nursing and inter-professional relationships.

Much later in my career when I commenced teaching at Charles Sturt, I observed senior staff mentoring new and junior academics. There seemed to be no sense of obligation, and I observed a real joy and enthusiasm in mentoring.

In addition to the orientation to university systems, policies and teaching practice, these mentoring relationships fostered research and long-term career goals. My own mentors have also been incredibly supportive and generous with their time and knowledge and I have reflected many times on how they have enriched me professionally and personally.

When I was offered the opportunity to undertake a Master of Philosophy, I was drawn to exploring and understanding the concept of mentoring. I had taught first year subjects for several years and observed many students who may have benefitted from a mentoring relationship. This concept and then a literature review (Chapter Two) informed the development of a Pilot Peer Mentor Project (PPMP), which is the subject of this thesis.

1.2   Overview of the PPMP

The PPMP was conducted at the Bathurst campus of Charles Sturt University , a multi-campus regional Australian university. The Bathurst campus was (and remains) the home campus of the candidate and the supervisory team. Charles Sturt offers the Bachelor of Nursing (BN) at five campuses. There is also the option of studying online and by mixed mode (a combination of on-campus and online study). The BN takes three years to complete if studying full time, however many students study part time for some or all the degree.

In 2018, 17.1% of Charles Sturt's students come from low socioeconomic or disadvantaged backgrounds. 'First in Family' or first generation' students have parents who did not attend university (Spiegler & Bednarek, 2013). First generation students comprised 34% of Charles Sturt students (Charles Sturt University Office of Planning and Analytics, 2018). In 2020, the percentage of first generation students increased to 44%. Likewise, the percentage of students from low socioeconomic or disadvantage backgrounds increased to 23% (Good Education Media, 2020). Students from regional and remote areas accounted for 43% of students (Charles Sturt University Office of Planning and Analytics, 2020). The demographic make-up of students in the Bachelor of Nursing degree reflects the broader Charles Sturt student population (Charles Sturt University Office of Strategic Planning and Information, 2018). These groups may find adapting to university study challenging due to financial constraints and a lack of social capital (Patfield et al., 2021; Pollard, 2018; Tower, Walker, et al., 2015). Charles Sturt provides academic support through individual and workshop programs addressing

numeracy, literacy, writing, referencing and study skills. There are also extensive resources in downloadable format such as information guides, videos and recorded workshops. The library offers on campus and online resources to improve the information literacy of students.

Charles Sturt uses its online reach to connect students to the University community through email and social media platforms such as Facebook, Instagram, blogs, and online forums. In addition to the Student Outreach Team, there are specific services for Equity groups such as First Nations students and students requiring support with illness and disability.

The attrition rate for all commencing students enrolled in a bachelors degree at Charles Sturt University in 2018 was 26.91% (Australian Government Department of Education Skills and Employment, 2020). Support programs such as a PPMP could facilitate access to extensive academic support and social and emotional well-being services mentioned above and may positively impact the attrition rate.

The mentors in the PPMP were second or third year undergraduate nursing students enrolled as on campus or 'internal' students at the Bathurst campus. The mentees were commencing their first year of study as on campus or 'internal' students at the Bathurst campus. During the first six weeks of session one (a period of intense adjustment for mentees), mentors were available through the PPMP, to provide practical and emotional support with an emphasis on encouraging mentees to access services provided by the university where appropriate. The PPMP assumed that for most mentees, growing confidence and independence would lead to most mentor/mentee relationships reaching a natural conclusion. For a small number of students who required ongoing assistance after the end of the session, the academic staff would be able to examine the ongoing needs of each student.

The PPMP was managed by the candidate with guidance from an inquiry group comprising a senior academic, members of the first-year teaching team and a mentor representative. The mentors and mentees were on campus until the mid-session break. After the mid-session break, when mentors were off campus for Workplace Learning, provision was made for students who wished to access ongoing support via the PPMP.

The democratic and reflexive nature of Participatory Action Research (PAR) enabled the project to evolve or respond to the needs of the mentors and mentees. PAR was also an appropriate methodology to use in a pilot project where the intention was to identify strengths and weaknesses within the PPMP and apply these to a potential future project (Rutherford - Hemming, 2018). This is expanded on in Chapter Three.

1.3 Presuppositions

Action Research methodologies such as PAR are capable of generating different types of understanding or knowledge. Kemmis (2010, p. 422) describes one type of knowledge as the understanding of self, "our practices, the situations in which we practise (sic) and the consequences of what we do….arises uniquely from our own struggle to understand our own lives". With the aim of transparency and self – awareness, researchers should declare values and presumptions that may impact on a PAR project.

The candidate made three presumptions stemming directly from personal experiences in being mentored and observing the enthusiasm in which mentors embraced their role at the commencement of the PPMP. Firstly, that all mentors would seek to fulfil the role in a committed manner. The second presumption was that most first-year students would embrace the opportunity to be mentored and seek opportunities to build a relationship with their mentor. Thirdly, that the PPMP would be a 'success' from the perspective of the level of support provided to mentees and the relationships developed between mentors and mentees during the PPMP.

1.4 Organisation of the thesis

The literature review, Chapter Two, is a comprehensive review of seminal and current literature on what is known regarding topics integral to the research questions - transition to tertiary study, self-efficacy, and peer mentoring. Transition is described by Hughes et al. (2020, p. 263) as a period of "change and instability"…"for many nursing students characterised by uncertainty, ambiguity and confusion". Self -efficacy is defined by Bandura (1977, p. 193) as "the strength of an individual's convictions that they can function successfully in challenging situations to achieved desired outcomes". The chapter concludes with an explication of the research aims, objectives, questions and expected outcomes.

Chapter Three describes Participatory Action Research, as the chosen methodology for the PPMP. There is a focus on both historical and contemporary perspectives with an emphasis on PAR in the context of nursing research.

Chapter Four, the research design, and method contain firstly an explication of the research design including data collection and analysis, aiming to inform the reader of how this project could be replicated elsewhere. The second section is a discussion of ethical issues. Data analysis and data quality is discussed in detail in a separate section of this chapter.

Quantitative findings are discussed in Chapter Five. This focusses on the demographic characteristics of participants and the New General Self-efficacy Scale [NGSES] (Chen et al., 2001). Measurement of retention and skill acquisition by mentors and mentees is also discussed in this chapter.

Qualitiative findings are explored in Chapter Six with themes derived from the data forming the framework for the discussion. The first theme, "Finding practical support and encouragement" highlights the positive experiences of mentees in the PPMP. The second theme, "Tools for engagement" explores the barriers to effective mentor/mentee relationships. The third theme, "Building connections to the nursing profession" discusses refocussing a future peer mentor program to capitalise on the insight that mentors have into the Bachelor of Nursing degree.

Chapter 7, the discussion chapter, explores knowledge generated in this study from qualitative and quantitative data in the context of the research objectives. Current literature is considered to further illuminate the learnings from this study. This chapter also situates signposts that lead to recommendations for a future peer mentor program.

The thesis concludes with Chapter 8. Chapter 8 begins with a brief synopsis of the thesis chapters. The strengths and limitations of the PPMP are discussed. Recommendations arising from the PPMP and implications for future research are also explored.

1.5   Summary of the chapter

This chapter has explained the candidate's interest in mentoring, which stems from experiencing the benefits of mentoring relationships. The background of the PPMP was followed by the pre-suppositions of the candidate. An overview of the structure of the thesis concluded this chapter.

The following chapter provides a literature review indicating what is known about student transition to tertiary study, peer mentoring programs for undergraduate nursing students, and the relevance of self-efficacy. This leads to the identification of the focus of this study.

Chapter Two – Literature review

2.0   Introduction

This literature review is a comprehensive examination of the key concepts informing this study. The antecedents of successful transition in the context of the Australian tertiary system are explored. Peer mentoring is defined, and guidance sought from previous studies on peer mentoring programs. A link between self-efficacy, academic success and undergraduate nursing students is articulated. The concept of peer mentor programs as a vehicle for improving self-efficacy and retention of undergraduate nursing students is identified as opportunity for new research. Lastly, the research aims, objectives, questions and expected outcomes are established.

2.1   Search strategies and timeline

Three literature searches were conducted in 2016, 2019 and 2021 and developed into a narrative literature review. The first literature review in 2016 was conducted as a component of a Master of Nursing coursework subject. Article title and abstracts were read to identify relevant articles. Snowballing "recursively pursued relevant references cited in already-retrieved literature" (Choong et al., 2014, p. e223). International and Australian literature was examined, and 3 studies published since 2007 were identified that evaluated or reported on peer mentor programs assisting undergraduate nursing students with transition to tertiary study. The strengths and lessons learned from studies identified in the first literature review in 2016 were incorporated into the Pilot Peer Mentor Project. There were no papers located in the 2016 review that measured changes to self-efficacy as an outcome of a peer mentor program for undergraduate nurses. This gap in the literature was the catalyst for the PPMP.

Subsequent literature reviews conducted in 2019 and 2021 identified in total 15 scholarly papers on peer mentoring and nursing students published since 2017. Article title and abstracts were read to ascertain relevance. Another comprehensive search was undertaken to identify information on the transition of first year students to university study. International literature was identified but the focus was on understanding transition in the Australian context. Scholarly papers were located, in addition to grey literature from government and non-government organisations. Grey literature was comprehensively examined to identify relevance to this study. The

findings from the 2019 and 2021 literature reviews were incorporated into this chapter and informed the discussion and recommendation chapters of the thesis.

Inclusion criteria for peer mentor programs were:

- Nursing students
- Transition to tertiary study
- Self-efficacy

Exclusion criteria for peer mentor programs were:

- academic results
- clinical placement,
- Workplace Learning,
- Transition to practice
- self-confidence
- self-esteem.

A small number of papers reporting on peer mentor programs focussed on increasing self-confidence and self-esteem were saved for further review as they contained advice on the practical aspects of peer mentor program implementation.

Table 2.0 below shows the details of the literature searches including the key concepts and search terms

Year of search	Database/s	Key concept	Search terms
2016	CINAHL ProQuest	Self-efficacy	"Self-efficacy"
		Academic results	"Academic performance", "academic success"
		Peer mentoring	Mentor, mentoring, "peer mentor program", "peer mentor"
		Nursing students	Nursing student or student nurs* or undergraduate nurs*
		university	"tertiary study", "higher education"
2019 2021	ProQuest Ovid EBSCOHost CINAHL Google Scholar	Peer mentoring	Mentor, mentoring, "peer mentor program", "peer mentor"
		Academic results	"Academic performance", "academic success"
		Nursing students	Nursing student or student nurs* or undergraduate nurs*
		transition	"Transition pedagogy", engagement, retention, attrition
		First year	"first year experience",
		university	"tertiary study", "higher education"
		Self-efficacy	"Self-efficacy"

Table 2.0: Key concepts and search terms

2.2 Successful transition to university study

Christie et al. (2017) observed that the first year at university is the foundation for success in later years. The commencement of the first session of study is dominated by a process known as transition. Transition is described as by Hughes et al. (2020, p. 263) as a period of "change and instability"…"for many nursing students characterised by uncertainty, ambiguity and confusion". A successful transition enables students to focus on their education by ensuring that administrative processes are not onerous, that support is available when required and that students are able to meaningfully connect to their peers and the university (Kift, 2015).

Rickard et al. (2018) noted that a student centred approach to the first year of study is crucial to improving student retention rates. Retention in the context of higher

education is defined as "the continuation of the education of students in the subsequent year until completion" (Adusei-Asante & Doh, 2016, p. 1). In the context of this study, retention is viewed as the number of mentees who indicated that they remained in the Bachelor of Nursing degree at Charles Sturt due to their participation in the PPMP. Attrition, which may be viewed as the opposite of retention, is defined by the Tertiary Education Quality and Standards Agency (June 2017, p. 8) as "the ratio of first year higher education students in a year who neither completed nor returned to study in the following year, to the total commencing students in that year… in courses at all levels". It has been noted that there are various definitions of attrition employed by scholars and other agencies and combined efforts are required to ensure greater lucidity around nomenclature (Adusei-Asante & Doh, 2016; Higher Education Standards Panel, 2017; Tertiary Education Quality and Standards Agency, June 2017).

Adusei-Asante and Doh (2016) concluded that there are three issues that underpin discussion of retention and attrition. Firstly, university level issues, with "little evidence of systematic, whole of institution approaches" (Kift, 2015, p. 57). Secondly, individual students must have support systems that aid them to address challenges of remaining at university. In terms of the broader student community, the concept of integration is pivotal. Adusei-Asante and Doh (2016, p. 7), view social integration as "potent" in reducing student attrition. Social integration ensures that students feel accepted and valued irrespective of their background (Bramble et al., 2018). Facilitating social integration is sometimes an overwhelming challenge for universities given the life circumstances of some students (Adusei-Asante & Doh, 2016). The three issues described by Adusei-Asante and Doh (2016) must be remedied in order to facilitate an effective transition process for new students.

There are students who face extra challenges in higher education. Equity groups are known to be historically disadvantaged or underrepresented student populations and commonly include, but are not limited to: "Aboriginal and Torres Strait Islander peoples, people from lower socio-economic backgrounds, people with disability, people from remote, rural or isolated areas, people who are first in their family to attend university, people from non-English speaking backgrounds, and women in areas of study where they have been under-represented" (Tertiary Education Quality and Standards Agency, 2017). A literature review by Baker (2020) concluded that in higher education, the retention and successful completion rates are lower in groups such as Indigenous students, students with disability and rural and remote students.

Rubin and Wright (2017), in a study conducted in Australia and the United States, determined that working class students faced greater challenges in social integration at university. The reasons for this were that working class students have less available income to socialise and secondly, that they are more likely to have work or family commitments. This is indicative of working class students generally being older than their middle class counterparts.

The needs of undergraduate nursing students during transition centre on the acquisition of knowledge to understand their new world and the development of supportive relationships (Rickard et al., 2018). The breadth and scope of knowledge required by new students is vast in relation to university, course, and subject specific knowledge. This includes understanding enrolment, course progression and mitigating confusion regarding information technology (IT) and online learning systems. Adjusting to the differences in expectations between other learning environments and tertiary study was a central concern. Developing a social network of friends is also important to a sense of belonging to the university (Birks et al., 2013; Hughes et al., 2020; Rickard et al., 2018).

Tower et al. (2015) utilised overall academic outcomes as a measure of successful transition in undergraduate nursing students with five other markers at key points in the first session: attendance at orientation, accessing blended learning platforms, early tutorial attendance, and submission and passing of the first assessment item. The importance of building social capital was also emphasised, particularly for "non-traditional" or students from equity groups (Tower et al., 2015, p. 122) . Measuring social integration is more complex as instruments have been developed for targeted populations. Definitions and measurements of academic and social integration depend on facility, course type and mode of delivery (Holmes, 2018).

Peer mentoring is viewed as a powerful facilitator of academic, personal and transitional support (Higher Education Standards Panel, 2017) thereby aiding retention. Peer mentor programs create an environment where students develop a sense of connection and belonging to a group, to their course of study, and to the university (Adusei-Asante & Doh, 2016; Yomtov et al., 2017). Mentors can share their knowledge of university systems which can empower mentees in addressing challenges in, for example, course progression issues. Peer mentoring can facilitate the development of relationships where students feel safe to ask questions, feel

supported and are able to express feelings such as stress and anxiety without a sense of judgement (Rickard et al., 2018; Smith-Wacholz et al., 2019).

Christie et al. (2017) observed that the first year at university is the foundation for success in later years of study. The needs of undergraduate nursing students during transition centre on the acquisition of knowledge to understand their new world and the development of supportive relationships (Rickard et al., 2018). Peer mentoring is viewed as a powerful facilitator of academic, personal and transitional support (Higher Education Standards Panel, 2017) thereby aiding retention. Having identified peer mentoring's importance to the transition of students to tertiary study, this concept will now be explored in more detail.

2.3   Defining peer mentoring

Mentoring is characterised by complex, defined, intentional relationships between an experienced and novice practitioner with the aim of providing 'professional vision' as well as guidance, encouragement and feedback (Gilmour et al., 2007; Vance, 1982, p. 8; Vinales, 2015). The relationship between the mentor and mentee is "collaborative, non-valuative and reciprocal" (Andersen & Watkins, 2018, p. 218). A mentor may act as teacher, sponsor, exemplar, counsellor and host. Vance (1982, p. 8), an early proponent of mentoring in nursing, described the role of a mentor as welcoming the initiate or mentee into a "new occupational and social world with its unique values, customs, resources and set of characters".

Mentoring has philosophical origins in humanism and social constructivism (Andersen & Watkins, 2018). Humanism espouses the intrinsic value of people and their capacity for growth. In the context of peer mentoring, a supportive, reciprocal relationship between mentors and mentees focussed on mentee goal setting and striving for self-actualisation reflects a humanistic approach (Andersen & Watkins, 2018). Social constructivism asserts that humans learn most effectively in relationships with those around them. Peer mentoring provides a relationship where learning can occur through collaboration with others (Andersen & Watkins, 2018). A collaborative approach to learning in the presence of a more capable peer, such as in a mentor/mentee relationship, facilitates an extension of knowledge and skills, described by Vygotsky as the "zone of proximal development" (Vygotsky, 1978).

In differentiating between mentoring and peer mentoring, Andersen and Watkins (2018) note the distinctive difference is that in peer mentoring, the mentor and mentee are equals with knowledge that compliments each other, rather than a novice – expert relationship. Definitions of mentoring are numerous, ambiguous and often the functions of the role contain enormous variation (Stone et al., 2013). Peer mentoring differs from peer learning; and from peer teaching or peer assessment, both features of a 'clinical mentor' role, common in the United Kingdom and Belgium and peer leadership programs in the United States. A clinical mentor plays a formal role in the education process and may be better described as a preceptor (Bos, 1998; Foster et al., 2015; Gilmour et al., 2007; Huybrecht et al., 2011). In an Australian context, mentoring is described by Health Education and Training Institute (2013), when referring to nurses, as a mechanism used to aid a competent learner to refine knowledge, skills and expertise. Preceptorship is an orientation technique for novice nurses characterised by direct supervision, typically occurring in a workplace setting and for a limited time period (Crew, 2016; Jacobs, 2018). The Health Education and Training Institute (2013) identifies the primary goal of preceptorship as ensuring patient safety.

Multiple terms used interchangeably can cause confusion and negatively impact on the perceived rigour and credibility of nursing research in this area (Stone et al., 2013). In this study, a peer mentor is a second- or third-year undergraduate nursing student providing practical support and guidance to first year students on adapting to university life and the Bachelor of Nursing degree. The role of peer mentors in the PPMP does not include academic or clinical tutoring.

Mentoring is characterised by complex, defined, intentional relationships between an experienced and novice practitioner with the aim of providing 'professional vision' as well as guidance, encouragement and feedback (Gilmour et al., 2007; Vance, 1982, p. 8; Vinales, 2015). Multiple terms used interchangeably can cause confusion and negatively impact on the perceived rigour and credibility of nursing research in this area (Stone et al., 2013). In this study, a peer mentor is a second- or third-year undergraduate nursing student providing practical support and guidance to first year students on adapting to university life and the Bachelor of Nursing degree. The role of peer mentors in the PPMP does not include academic or clinical tutoring.

Now that the concept of mentoring has been explored, section 2.4 will focus on methodological weaknesses in peer mentoring studies.

2.4   Methodological issues in peer mentoring studies

Methodological issues in studies concerning peer mentoring focus on the absence of a guiding theoretical framework, and the rigour and generalisability of the studies, specifically poor descriptions of how data were collected and analysed. Due to the diverse nature of mentoring programs many have little in common with each other (Crisp & Cruz, 2009; Egege & Kutieleh, 2015; Gershenfeld, 2014; Jacobi, 1991).

Gershenfeld's (2014) review of twenty studies conducted between 2008 and 2012 critiqued empirical research in formal mentoring programs with undergraduate students as mentors and mentees. There were significant deficits noted in internal validity (lack of control or comparison groups) in the studies, as well as lack of reliable measurement instruments (Gershenfeld, 2014). Threats to external validity limiting the generalisability of the studies included small samples and a single geographical location. In employing the Levels of Evidence-Based Intervention Effectiveness (LEBIE) scale to assess methodological rigour it was concluded that none of the twenty studies met the top two tiers of classification since none employed an experimental design (Gershenfeld, 2014, p. 381). Gershenfeld (2014) asserted that 'retention' (see glossary) of students was not viewed as a suitable measure of success as this was viewed as an administrative term impacted by subjectivity. However, the reliance on retention as a key outcome measure by universities and organisations such as the Tertiary Education Quality and Standards Agency (TEQSA) necessitates inclusion in this study. Gershenfeld (2014) also concluded that there was a dearth of conclusive evidence by empirical standards that peer mentoring programs could be reported as effective. Gershenfeld (2014) recommended more rigorous research designs, explication of operational features of mentoring programs and the collection of qualitative data that is internally and externally valid.

An integrative review conducted by Wong et al. (2016) of peer mentor programs for undergraduate nursing students reached the same conclusion on appraisal of more contemporary literature. Wong et al. (2016) examined 11 studies in total with a variety of research designs. The review findings illustrated poor methodological rigour, validity, trustworthiness and potential threats to external validity in the included studies (Wong et al., 2016, p. 147). However, the academic, social mental health and personal benefits of mentoring programs to participants were also acknowledged.

A literature review conducted by Rohatinsky et al. (2017) synthesised the perspectives of twenty articles published between 2006 and 2016 reporting on peer mentor programs for undergraduate nursing students. The findings echo the review by Wong et al. (2016) with suggestions that future research focus on improving the rigour of evaluation criteria and more intensive examination of negative aspects and ways peer mentor programs could be improved.

2.5   Benefits of peer mentor programs for mentors and mentees

Despite issues around the methodology for studying peer mentor programs, there is consensus in the literature that peer mentor programs for undergraduate nurses bring benefits for mentors and mentees.

Mentees reported an improvement in study skills (Coghlan, 2014; Frank, 2018; Jacobs et al., 2015), increased confidence (Jacobs et al., 2015; Miller et al., 2019), a reduction in stress and anxiety (Demir et al., 2014; Jacobs et al., 2015; Kachaturoff et al., 2019; Miller et al., 2019; Yüksel & Bahadır-Yılmaz, 2019), and a sense of emotional and practical support and advice regarding challenges (Andersen & Watkins, 2018; Frank, 2018; Gilmour et al., 2007; Joung et al., 2020; Lombardo et al., 2017; White, 2018). Mentees grew in their understanding of the university (Gilmour et al., 2007; Lombardo et al., 2017; Miller et al., 2019; Yüksel & Bahadır-Yılmaz, 2019) and the nursing profession (Jacobs et al., 2015). In Stanley and Lapsley (2008), Yüksel and Bahadır-Yılmaz (2019), and in Joung et al. (2020) mentees' social isolation decreased and sense of identity, of belonging and being part of a community was enhanced.

Studies by Won and Choi (2017) and Gilmour et al. (2007) reported that mentors found their role rewarding and were proud to be able to assist more junior students. Mentors reported an increase in; critical thinking skills (Andersen & Watkins, 2018), cooperation and collaboration skills (Andersen & Watkins, 2018; Miller et al., 2019), time management (Miller et al., 2019), communication (Jacobs et al., 2015) and leadership skills (Andersen & Watkins, 2018; Frank, 2018; Jacobs et al., 2015; Miller et al., 2019; Won & Choi, 2017). For some mentors, their role sparked an interest in nursing education (Andersen & Watkins, 2018).

Mentoring relationships characterised by interpersonal difficulties and unclear or incompatible expectations are described as ineffective relationship experiences (Eby & McManus, 2004) and are discussed in studies by Gilmour et al. (2007) and Won and

Choi (2017). The importance of boundaries in the mentor/mentee relationship was emphasised by Hlengiwe et al. (2020) and (Andersen & Watkins, 2018) who suggested that formal agreements, role delineation, clear expectations, effective communication, and provision of constructive feedback were important in managing relationships between mentors and mentees. In more malign instances, the power differential inherent in the mentor relationship may be exploited through bullying and reputations can be sabotaged through jealousy. Green and Jackson (2014, p. 84) acknowledged the potential for destructive relationships and describe mentoring as an act of "professional generosity" and advocate integrity, honesty, and communication as the bases for "authentic relationships".

There is consensus in the literature that peer mentor programs for undergraduate nurses bring benefits for mentors and mentees. Studies by Gilmour et al. (2007) and Won and Choi (2017) acknowledge the potential for mentor/mentee relationships exemplified by disharmony.This speaks to the importance of mentor preparation and selection, which will be discussed next in section 2.6.

2.6 Selection and preparation of mentors

Given the potential difficulties in relationships between mentors and mentees, mentor preparation and selection is recognised as an important factor in the success of peer mentor programs. Gilmour et al. (2007) described their orientation workshop content in detail. The role of the mentor was defined, the six weeks of the program were planned, communication skills were discussed, and support services and referral mechanisms for mentees were included (Gilmour et al., 2007).

Mentor preparation described by Stanley and Lapsley (2008) combined a workshop for the university wide mentor program and a specific component for the School of Nursing and Midwifery. An extensive mentor handbook augmented the orientation program that mentors referred to throughout the session (Stanley & Lapsley, 2008). The importance of mentor preparation in areas such as effective communication and managing conflict, the provision of ongoing support in the form of continuing education and feedback was also emphasised by Huybrecht et al. (2011); Vinales (2015); Foster et al. (2015), Brannagan et al. (2013) and Hlengiwe et al. (2020).

A draft position description for a peer mentor program for undergraduate nurses at Curtin University in Western Australia was developed by Stanley (2014). This position

description specifies that mentors must have a genuine interest in supporting first year students within a diverse student population, an ability to define and solve problems, knowledge of issues impacting on new tertiary students, a capacity to share knowledge, skills and experience, the ability to encourage excellence in others, and well developed information technology, communication, interpersonal and negotiating skills (Stanley, 2014).

However, it may be that the key attribute of an effective mentor is advanced communication skills; specifically, communication characterised by openness, and active listening and empathic responses. The ability to inspire, to convey support and encouragement, and to assist in goal setting is also contingent on communication skills. Mentors should be persons of integrity, must be trustworthy, honest and non-judgemental (Eller et al., 2014; Green & Jackson, 2014; Hlengiwe et al., 2020; Huybrecht et al., 2011).

Lombardo et al. (2017) identified matching of mentors and mentees as a foundation for successful mentoring relationships. Matching was based on a questionnaire that included demographic and personal information such as hobbies and interests. Ethnicity was also noted as reason for mentees choosing their own mentor, as they would be able to "communicate with their own language, not just English…" (Gilmour et al., 2007, p. 41). A matching process was also used by Frank (2018) that collected similar data in order to identify mentors and mentees with common interests. Completing this form was not compulsory and a 'speed dating' process was used to form groups. The mentor to mentee ratio was 3:1. A lower ratio was noted by participants as a preference for a future program (Frank, 2018).

Matching of mentors and mentees in a study by Won and Choi (2017) was based on academic results. Mentors were required to have a high grade point average to assist mentees with low academic results. Mentors were required to attend an orientation program to ensure that they understood their role, managing interpersonal relationships and communication skills.

Miller et al. (2019) described a more rigorous selection, preparation, and evaluation process for mentors. Mentors were required to have a Grade Point Average (GPA) of 3.0 and "possess the academic and experiential background to facilitate a meaningful first year experience" (Miller et al., 2019, p. 160). Miller et al. (2019) did not include further information clarifying how GPAs were calculated. There may be variation in how

universities calculate GPA, however, Charles Sturt University (2021) defines GPA as "an average calculation of the total of marks received divided by the number of subjects completed". A grade of high distinction in a subject aligns with a GPA of 7, a grade of distinction in a subject aligns with a GPA of 6, a grade of credit aligns with a GPA of 5, and a grade of pass in a subject aligns with a GPA of 4 (Charles Sturt University, 2020). Mentors completed a one week preparation course at the start of the academic year course followed by a training day later in the spring session. Attending regular weekly meetings was an expectation of mentors. Mentors' performance was evaluated twice per session by mentees and the program coordinator. Mentors were paid an hourly wage (Miller et al., 2019). Feedback from mentees to an online questionnaire (83% response rate) revealed that 89% – 96% agreed or strongly agreed with positive effects of being mentored. These effects included assistance with integration, the provision of foundations to build professional, academic and social excellence, and an environment of safety to discuss challenges (Miller et al., 2019). Miller et al. (2019) did not include information regarding negative aspects of the peer mentor program. There was also a paucity of detail on challenges related to the structure of the peer mentoring program evaluated by Frank (2018). The lack of questions or concerns from participants "lead to the assumption that the program was well structured…" (Frank, 2018, p. 72).

Lombardo et al. (2017) also noted that contrary to evidence from previous studies, the absence of a strict framework to guide mentoring relationships was viewed as a strength of the program. This gave relationships the opportunity to evolve without pressure or expectation (Lombardo et al., 2017). It is not clear from the study how mentors were prepared for their role, although there were workshops available during the program that assisted with role clarification. A lack of program personnel to support the program was also noted by participants. The program was evaluated through semi-structured interviews (Lombardo et al., 2017). Lombardo et al. (2017) did not include the questions that formed the basis for the interviews with participants. Program challenges were discussed as a component of one sub-theme but were not discussed in detail.

Antecedents to successful peer mentor programs include the selection of mentors with knowledge and skills relevant to the aims of the program. Matching of mentors and mentees according to age, ethnicity, interests, and life circumstance may also be useful. Preparation of mentors is vital to ensuring that they can provide effective support to mentees. The requirement for a peer mentor program with a defined or

flexible structure should be determined by the aims of the program and practical considerations such as budget.

2.7   Understanding self-efficacy

The work of Bandura (1977) is seminal in the development of theory on self-efficacy. Bandura's Social Learning Theory Bandura (1977, p. 193) defines self-efficacy as, "the strength of an individual's convictions that they can function successfully in challenging situations to achieved desired outcomes". Gallagher (2012, p. 314) clarifies that self-efficacy is "not a perception of whether one *will* perform these actions or whether one *will* necessarily achieve the desired outcomes, but an evaluation of whether one *can* perform the necessary actions". Where self-efficacy is vitally important is in a person's pursuit of their most valued goals.

Individuals with a high sense of self efficacy "think, feel and act" differently to those who have a lower level of self-efficacy (McLaughlin et al., 2008, p. 213). Individuals who have high self-efficacy view personal and professional difficulties as challenges to be confronted and overcome through sustained robust effort (Bandura, 1982). A low sense of self-efficacy results in a perception of tasks as more difficult than they are. Failure foments feelings of inadequacy, hampering motivation and persistence in achieving future goals (McLaughlin et al., 2008; van Dinther et al., 2011).

Bandura (1982) identifies four main influences in creating self-efficacy: enactive mastery experiences, vicarious experiences, social persuasions, and physiological and psychological states. Enactive mastery experiences or successful task accomplishment are deemed as the most powerful source for creating a stronger sense of student self-efficacy. This is particularly true if a person contributes their success to their own actions. Vicarious experiences are observing another's performance, whereby students can gauge their own abilities. Witnessing others achieve their goals can encourage a person's positive perception of their own capabilities. Visualisation is also an effective way to enhance self-efficacy, for example, an athlete imagining being on the winner's podium. Through social persuasion, students obtain positive feedback about their ability to perform a task from significant others such as peers or teachers. Somatic and emotional cues are the least effective, but still a significant way of promoting self-efficacy. If an individual is relaxed while performing a task they are less likely to question their abilities. Unpleasant feelings such as anxiety and pain can

weaken an individual's feelings of self-efficacy leading to decreased performance (Gallagher, 2012; van Dinther et al., 2011).

It is important to note a link between the ideas of Vygotsky (1978) and Bandura (1982). Both theorists acknowledge the value of social learning; Bandura emphasised that experience and competency are characteristics of those who are the best models of behaviour (Tudge & Winterhoff, 1993). In Vygotsky's theory, understanding is generated not by observing or receiving feedback from the model, but is created *in the process of collaboration* with "another more competent in the skills, tools and technologies of the culture" (Tudge & Winterhoff, 1993, p. 77).

2.8   Self-efficacy and closely related concepts

Self-efficacy is linked to but is not the same as self-esteem and self-confidence. Differentiating between these terms is important as this thesis focusses on self-efficacy only.

Unlike trait self-esteem, self-efficacy is not a stable trait, but is context or task specific (Gallagher, 2012). Self-esteem refers to the "extent in which one values and prizes the self" (Kille & Wood, 2012, p. 321). There are two types of self-esteem. Trait self-esteem is relatively stable and reflects an individual's overall views about personal characteristics. State self-esteem pertains to self-assessments that occur in response to specific situations. A person's trait self-esteem and state self-esteem may be incongruent at times (Kille & Wood, 2012; Stajkovic & Luthans, 2002). Bryer et al. (2015) and Peterson (2009) established a positive correlation between self-efficacy and self-esteem. These two closely interconnected concepts have also been studied in tandem by Taylor and Reyes (2012) and Tras et al. (2013).

Self-confidence is a high level of self-belief, that one's "abilities, judgements or decisions" can be trusted ("Self-confidence," 2015, p. 394). This can be relation to a specific situation or more generally. In a study by Chesser-Smyth and Long (2013), the differences between self-efficacy and self-confidence were indistinct, however it is important to note that self-efficacy focusses on achieving desired outcomes, rather than self-belief (Bandura, 1982).

2.9 Self-efficacy and academic performance

There is evidence linking high self-efficacy with academic performance in the liberal arts (Brady-amoon & Fuertes, 2011), and psychology and education (Morton et al., 2014; Weiser & Riggio, 2010). In a study by Morton et al. (2014) of 84 full time, first year students at Queensland University of Technology, high self-efficacy showed significant negative correlations with depression, anxiety and stress and a significant positive relationship to adaptation to university. van Dinther et al (2011, p. 97) asserted that "self-efficacy influences motivation and task cognition by means of affecting students' task interest, task persistence, choices, goal setting and their use of cognitive, meta-cognitive and self-regulatory strategies". They further concluded that self-efficacy is "vital to academic performance and can affected positively" (van Dinther et al., 2011, p. 105). Consistent with other studies, Sullivan and Guerra (2007) found high self-efficacy to be a strong predictor of academic achievement. This study added that academics should not only identify students with low self-efficacy, but those with performance avoidant behaviours such as self-sabotage (Sullivan & Guerra, 2007).

Jury et al. (2015) linked low self-efficacy to high levels of performance-avoidant goal adoption. Jury et al. (2015) further concluded that performance-avoidant goal adoption was particularly evident in first generation students who were high academic achievers. High-academic results brought first generation students closer to an upward trajectory in social mobility and identity change. The resultant anxiety caused students to adopt behaviours that put their academic performance in jeopardy (Jury et al. 2015).

Other strategies identified to improve self-efficacy at university include the discussion of concepts such as self-efficacy in class, identifying talents and strengths of students, learning through authentic learning experiences that bolster problem solving ability and skill mastery, and group activities incorporating self and peer assessment (Morton et al., 2014; Taylor & Reyes, 2012).

2.10 Self-efficacy and undergraduate nursing students

There are two primary themes in the literature exploring the self-efficacy of undergraduate nursing students. The first theme is self-efficacy as a predictor of attrition. Undergraduate nursing programs in Australia, the United Kingdom, the United States and Canada suffer from unacceptably high rates of attrition (Cameron et al., 2011; Rodgers et al., 2013; Salamonson et al., 2014; Tranter et al., 2018). Three

American studies found no significant correlation between self-esteem, self-efficacy, and student attrition in baccalaureate nursing students and associate degree nursing students in their first session of study (Bryer et al., 2015; Peterson-Graziose et al., 2013; Peterson, 2009).

Peterson (2009) explored self-efficacy in the context of attrition and found no statistically significant relationship between self-esteem, self-efficacy, or academic success, although self-esteem and self-efficacy were significantly correlated to each other. In a study of 136 baccalaureate nursing students, Taylor and Reyes (2012) measured self-efficacy and resilience in relation to test scores in five subjects over a 16 week semester. No statistically significant differences were found in either self-efficacy or resilience scores between the two data collection points (early and late semester). Further research is recommended by Taylor and Reyes (2012) in order to develop curricula and teaching strategies to promote retention (and reduce attrition) in undergraduate nursing programs.

The second and more widely researched theme is self-efficacy as a predictor of academic success. Studies reveal conflicting results. McLaughlin et al. (2008), in a longitudinal study of 350 undergraduate nursing students, demonstrated a link between higher self-efficacy beliefs and final marks at the conclusion of the course. Suggestions on optimising students' self-efficacy through emphasising empowerment, smaller class sizes to allow individual encouragement and peer modelling were discussed. However, McLaughlin (2008) does not offer clear strategies to improve the quality of educational programs and the standard of teaching.

A study by Chen et al. (2019) utilised a quantitative approach to study the complex interplay between self-regulated learning ability, metacognitive ability and general self-efficacy in 216 undergraduate nursing students from all year cohorts in an undergraduate nursing degree. It concluded that there is a positive relationship between all three concepts. Limitations noted by the authors relate to sample size and study location and the need for further research is highlighted (Chen et al., 2019).

In the clinical environment, Allari et al. (2020, p. 260) demonstrated a positive association between the "caring behaviours" of instructors and the general self-efficacy score of students, possibly reflecting social persuasion and somatic cues such as stress as mediators of self-efficacy (Gallagher, 2012). While the results are not

conclusive it suggests that the capacity to demonstrate caring behaviour should be a consideration in the recruitment process of academics (Allari et al., 2020).

Mi Sook and Sue Kyung (2019) used structural equation modelling to establish a predictive model for clinical performance in nursing students. The key factors impacting clinical performance were problem solving and self-efficacy. High emotional intelligence increases self-efficacy and problem solving ability which improve clinical performance. Contrary to other studies, Mi Sook and Sue Kyung (2019, p. 386) concluded that the "emotional appraisal of others has a direct impact on problem solving ability and self-efficacy, and that the use of emotion and regulation of emotion have direct effects on self-efficacy". This conclusion appears to reflect social persuasion as a key factor in the development of self-efficacy (Gallagher, 2012).

An evaluation of the 'check in – check out' (CICO) process in collaborative learning spaces considered CICO's capacity to advance student self-efficacy (Henderson et al., 2018). CICO contains three key elements, a 'check-in' (CI) or briefing process, a clinical practice process (CP) which refers to the knowledge and skills developed during classes, and finally a 'check-out' (CO) or debriefing process. CICO is pertinent for clinical laboratories and simulation environments, encouraging students to be active, engaged learners (Henderson et al., 2018). Although self-efficacy was a key concept in this study, there was no tool to measure self-efficacy. Self-efficacy was gauged on the students' participation in CICO, rather than whether students felt that by participating in CICO that their self-efficacy was improved (Henderson et al., 2018). This is contrary to Gallagher's (2012) clarification that self-efficacy is not outcome based, but an individual's evaluation that they can do what needs to be done if required.

There are challenges and opportunities for future researchers in the study of self-efficacy and related concepts and how curriculum can best support students to develop these beliefs and behaviours. Current literature on self-efficacy and peer mentoring in nursing will now be explored with the aim of establishing potential for future research.

2.11   Linking enhanced self-efficacy to peer mentoring programs

The four main influences in creating self-efficacy described by Bandura (1982); enactive mastery experiences, vicarious experiences, social persuasions, and physiological and psychological states are present in peer mentor programs in nursing. Enactive mastery experiences or successful task accomplishment are deemed as the

most powerful source for creating a stronger sense of student self-efficacy. Mentoring programs provide an opportunity for problem solving and goal accomplishment. Vicarious experiences are observing another's successful performance, whereby students can gauge their own abilities to perform successfully. Through social persuasion, mentees obtain positive feedback about their ability to reach their goals from significant others such as mentors or teachers. Anxiety and stress are reduced by mentoring, creating a positive somatic and emotional states conducive to success (Gallagher, 2012; Kachaturoff et al., 2019). Raymond and Sheppard (2018) conducted a quasi-experimental study with a small sample size measuring changes to stress, sense of belonging, self-efficacy, and loneliness pre and post peer mentor program for baccalaureate nursing students. The findings revealed a statistically significant increase in the self-efficacy and sense of belonging of the experimental group and a decrease in stress and loneliness. In contrast, the self-efficacy of the control group decreased. There was a small increase in the sense of belonging in perceived stress and loneliness (Raymond & Sheppard, 2018). An integrative review by Kachaturoff et al. (2019) concluded that peer mentoring decreases stress and short term anxiety levels of undergraduate nursing students. They suggest caution in interpreting the results due to the small number of studies reviewed. Studies by Raymond and Sheppard (2018) and Kachaturoff et al. (2019) suggest potential for further research to better articulate the link between peer mentor programs, higher levels of self-efficacy and a reduction of negative somatic and emotional states.

2.12   Summary of current literature and identification of gap in evidence

A successful transition to tertiary study for new students forms the foundation for future success at university and aids student retention. Undergraduate nursing students need to understand the administrative systems, such as enrolment and course progression that ensure smooth progress through the tertiary system. The on-line learning environment is a new frontier for many students with multiple IT platforms providing learning resources. Of pivotal importance to transition is the establishment of new friendships enabling students to feel they belong to the university and to a course of study.

Peer mentoring has been demonstrated as a highly effective way of aiding the transition of new students and brings benefits to mentors. The benefits of a relationship with a mentor include improved study skills, enhanced confidence and mentees feeling a sense of belonging to the university. For mentors, along with the satisfaction of

assisting a mentee, an improvement in time management, critical thinking and organisational skills were reported. Peer mentoring is viewed as a powerful facilitator of academic, personal, and transitional support and therefore may positively impact student retention. The four main influences that positively impact self-efficacy described by Bandura (1982); enactive mastery experiences, vicarious experiences, social persuasions, and physiological and psychological states are present in peer mentor programs in nursing.

There are limited studies that explore the relationship between a peer mentor program, self-efficacy, and student retention in undergraduate nursing students. These studies suggest that a peer mentor program may create conditions that improve student self-efficacy and student retention; however, this has not been established conclusively. This is an aperture in our understanding worthy of further research and is the subject of this thesis.

2.13   Research aims, objectives, questions and expected outcomes

Section 2.13 details the research aims, objectives, questions and expected outcomes of a pilot peer mentor project concerned with improving self-efficacy and student retention.

2.13.1   Research aim

To use a Participatory Action Research (PAR) methodology to explore and examine whether a pilot peer mentor project (PPMP) within an undergraduate nursing degree improves student self-efficacy and retention.

2.13.2   Research objectives

1.   Evaluate whether a pilot peer mentor project impacts on the retention of mentees (first year undergraduate nursing students) at the end of session one.

2.   Evaluate whether a pilot peer mentor project impacts on the self-efficacy of mentors (second and third year undergraduate nursing students) and mentees (first year undergraduate nursing students).

3.   Obtain feedback regarding the effectiveness of the pilot peer mentor project from mentor's perspective.

4. Obtain feedback regarding the effectiveness of the pilot peer mentor project from mentees perspective.

5. Identify barriers and enablers to the successful delivery of the pilot peer mentor project.

2.13.3 Research questions

1. Does the pilot peer mentor project facilitate nursing student retention?

2. Can changes to self-efficacy be used as a tool for measuring the success of the pilot peer mentor project?

3. Do mentors and mentees believe the pilot peer mentor project is beneficial?

2.13.4 Expected outcomes

1. An impact on the engagement of mentees at the conclusion of session one 2016 compared to session one 2015 as evidenced by student retention and self-reported levels of self-efficacy.

2. An improvement in self-efficacy for mentors and mentees participating in the pilot peer mentor project.

3. A framework for the development of a future peer mentor project based on feedback from mentors and mentees.

2.14 Summary of the chapter

This literature review has comprehensively examined the key concepts informing this study. The antecedents of successful transition, including peer mentoring, were explored in the context of the Australian tertiary system. Learnings from previous peer mentoring programs such as the selection and preparation of mentors will inform the research design and method in Chapter 4. A link between self-efficacy, academic success and undergraduate nursing students was articulated. The concept of peer mentor programs as a vehicle for improving self-efficacy and retention of undergraduate nursing students was identified as opportunity for new research and informed the research aims, objectives and questions. Next, Chapter Three discusses the methodology of this study.

Chapter Three – Methodology

3.0   Introduction

This chapter discusses the methodological framework of the study. Participatory Action Research (PAR) is a methodology that developed to extend the collaborative aspects of Action Research. Included in this section are historical and contemporary perspectives on Participatory Action Research and the paradigmatic framework for the PPMP. Another focus of discussion is how Participatory Action Research has been employed as a catalyst for change in diverse contexts of nursing practice.

3.1   Defining Action Research and Participatory Action Research

An Action Research approach is congruent with answering the research questions:

1.   Does the pilot peer mentor project facilitate nursing student retention?
2.   Can changes to self-efficacy be used as a tool for measuring the success of the pilot peer mentor project?
3.   Do mentors and mentees believe the pilot peer mentor project is beneficial?

PAR supports a framework to conduct a Pilot Peer Mentor Project (PPMP). It is a suitable methodology for a study with aims and intended outcomes focussed on understanding and potentially improving an aspect of educational practice – the transition of undergraduate nursing students to tertiary study through a peer mentor project. The collaborative and democratic approach of PAR neutralises an inherent power imbalance existing between students and academics. Student voices are clearly heard and responded to during every stage of the research process (Hummelvoll & Severinsson, 2005). The candidate assumed the role of project leader and students became co-researchers in the PPMP.

There are numerous definitions of Action Research in the literature which tend to focus on the description of characteristics (Waterman et al., 2001). Reason (2002, p. 169)

describes Action Research as a "family of participative, experiential and action-orientated approaches to research…which sometimes overlap and…emphasize different aspects of the Action Research movement". This study adopts the following definition; "Action Research investigates a defined area of concern to an individual or group with the aim of finding solutions to problems, to bring about change in an organisation or to generate theory" (Pain et al., 2011, p. 2). This definition is suitable as it reflects the broad nature of approaches to Action Research and does not adopt a philosophical perspective (Waterman et al., 2001). Carr and Kemmis (1986) delineate the outcomes of Action Research as practice based; improving practice, improving the understanding of practice and lastly, improving the environment in which practice occurs. Lewin (1946) identified Action Research as a cycle or spiral of four stages: planning, acting, observing, and reflecting. Although there may be changes to nomenclature, these stages are reflected in more contemporary iterations of Action Research (Meyer, 1993).

Action Research has evolved from the "classical" form originating from the work of Kurt Lewin into a fluid and dynamic set of paradigms situated within varying disciplines such as health, education, and the social sciences. Forms of Action Research such as Cooperative Inquiry assume different ontological, epistemological, and methodological standpoints. There are also diverging views on politics, collaboration, and the importance of change and improvement as outcomes of Action Research (Greenwood, 2011; Potvin et al., 2012; Thiollent & de Toledo, 2012). As noted by Elden and Chisholm (1993, p. 122) "much has changed in the world and Action Research has changed in response".

Participatory Action Research (PAR) is a highly transformative, collaborative, and democratic form of Action Research. Within PAR, there is also a wide variety of ideological positions. Alfredo Molano said of the beginnings of PAR, "As with all great things, it had no single inventor. Nobody discovered it, it was the result of an atmosphere rarefied by the clash between clear-cut scientific explanations and a rough reality" (Swantz, 2008, p. 31). However, the ideas of Paulo Freire have significantly influenced the development of PAR. Freire was particularly concerned with poverty

and marginalisation. To respond to this, Freire advocated critical consciousness as way of liberating individuals and communities. Critical consciousness encompasses education and engagement with the complexity of political, social and economic systems as a way of facilitating change (MacDonald, 2012).

The key principle of PAR is that the function of research is to facilitate the empowerment of individuals to plan their own future and that local knowledge is critical in designing and executing projects. PAR also acknowledges that bringing expertise from outside the organisation or community to advise where appropriate may also be of value (Greenwood, 2011). Within a health system that is becoming impacted by neo-liberal models and practices, action research with participatory approaches can contribute towards an environment of "empowerment and health advocacy" aimed at addressing inequalities created by the imposition of business models on the health system (Thiollent & de Toledo, 2012).

3.2   The origins of Action Research

The origins of Action Research and PAR are found in the work of Kurt Lewin. Lewin is considered a pre-eminent 20th century scholar of education and psychology (Potvin et al., 2012). The origins of Lewin's experience as a Jew in fascist Germany and an immigrant to the United States of America informed his development of the Action Research paradigm. The social isolation he experienced in these contexts were the catalyst for developing and applying his theories to intergroup relations and finding solutions for social issues (Bargal, 2006). Lewin had a deep ideological commitment to the concept of democracy. In the context of the research process this extended to the relationship between researchers, practitioners and clients (Bargal, 2006; Burnes, 2004).

Lewin viewed his key theories as symbiotic, as opposed to separate concepts. Field Theory describes the complex forces that shape individual and group behaviour. By understanding these forces in the field or "life space" behaviour can then be altered (Lewin, 1943). The life space encapsulates the perceptual and psychological

environment as perceived consciously or unconsciously by the individual. Lewin's admiration for physics led to Field Theory being expressed by the mathematical formula $B = f(p, e)$. Behaviour B is a function of the interface between the person or group p and their environment e (Burnes, 2004; Burnes & Cooke, 2013; Friedman, 2014).

Lewin (1946) further proposed that the group should be the focus of change as the behaviour of individuals is augmented by group forces. Group Dynamics aims to identify the features of a group which cause it to respond in a certain manner and secondly, how can these dynamics (forces) be changed to alter group behaviour. The Three-Step Model describes how permanent behavioural change occurs (Burnes, 2004).

The Three-Step Model (Lewin, 1946) describes a successful change in a group as consisting or three steps or levels. Step One involves creating a disequilibrium or "Unfreezing" whereby the current status quo is challenged. This must be done in an environment of psychological safety for the participants. Step Two "Moving", constitutes a shift in conduct, knowledge and values which occurs in the context of trial and error. Stabilisation of group culture, policy and practice follows in Step Three "Refreezing" which aims to prevent regression to old ways of thinking and behaving (Bargal, 2006; Burnes, 2004).

Field Theory, Group Dynamics, the Three Step Model and Action Research form an integrated approach to understanding and enacting change. Field Theory and Group Dynamics have informed the understanding of individual and group dynamics in this study. The Three-Step Model is a vehicle to enact change and can be used in an Action Research framework. Action research cycles were used to implement the PPMP and enabled reflexivity between intervention, review, and evaluation stages, which ensured the project could respond to the needs of the participants.

3.3   Ways of knowing in Participatory Action Research

Through a focus on transformation as an outcome of the research process, PAR views reality as subjective and malleable. Using PAR, individuals, groups and organisations can construct a reality based on needs and goals through a process of 'co-creation' (van der Riet, 2008). The concept of reality being socially constructed is a feature of more contemporary forms of Action Research such as PAR and its utilisation as a mechanism to construct reality is not a value neutral exercise. All research participants have values, biases and preferences that they bring to and can potentially influence the PAR process (Elden & Chisholm, 1993). As a research participant, the candidate's values, biases, and preferences are consequently acknowledged as intrinsic to the PPMP and are discussed in this thesis. The presence of these need not be viewed as a limitation except arguably if they impede the process of change or transformation that is the intention of the study.

Kemmis (2010, p. 422) offers an alternate perspective, identifying three types of knowledge generated by Action Research. Firstly, there is knowledge generated by, for example, the scientific method. This is objective knowledge that is external to the "knower". Secondly, there is interpretive knowledge that results from an individual increasing understanding through formal and informal education. Thirdly, is the knowledge that emerges from experience and "reflection on experience" (praxis), which Kemmis (2010) argues, Action Research is uniquely suited for.

A key criticism of Action Research from a positivist perspective is a lack of rigour, validity and objectivity (Waterman et al., 2001). In response to this, it could be argued that if the intended goal of PAR is transformation, then how transformation can be planned, undertaken, and evaluated may be influenced by objective data. This data should be collected, analysed and reported on using accepted methods (Thiollent & de Toledo, 2012). Paradoxically, the perceived ontological and epistemological limitations of the positivist perspective may contribute to the increasing interest in Action Research and other participatory methodologies. The view of reality as objective, measurable and lacking a social dimension limits the applicability of the

positivist paradigm to real world contexts (Casey et al., 2018; van der Riet, 2008). According to van der Riet (2008, p. 522) human action cannot be understood "without accounting for the relationship between humans and context".

3.4   The development of PAR in nursing

The utilisation of Action Research in nursing research can be seen in the literature from the mid-1980s. At this time, nursing research utilised primarily positivist methodologies, which were a mechanism for nursing to claim status as an academic discipline and compete for research grants in the health sector which were dominated by the biomedical sciences (Hills & Watson, 2011; Meyer, 1993; Sparrow & Robinson, 1994).

An early critique of the suitability of Action Research as a methodology for nursing research was conducted by Titchen and Binnie (1993). They recognised the tension between the roles of "insider" and "outsider" in Action Research studies conducted in a nursing milieu. This tension suggests that the place of collaboration, democracy and reflexivity were still evolving. Titchen and Binnie (1993) highlight the possible negative impacts on the research team of a highly collaborative approach; specifically, professional relationships and psychological stress. With a focus on Action Research as a way of facilitating change in clinical practice, Titchen and Binnie (1993, p. 861) proposed a "double-act" model that incorporates a clear delineation of roles between researchers and change agents.

Sparrow and Robinson (1994) raised the potential of Action Research as a way of addressing the nursing theory – practice gap in an environment of rapid organisational change and the exposure of healthcare to market forces. They were cautious in their recommendations however, viewing management and fund holders as potentially non-receptive to Action Research studies due to a preference for overall certainty of approach that positivist methods offer. Nurses working in clinical areas may also be non-receptive to research due to the perception that it will foment added stress in an already busy working environment (Sparrow & Robinson, 1994). Secondly, they asserted that Action Research and its intent to facilitate the empowerment of those

involved may not be well received by those with a wish to maintain the status quo (Sparrow & Robinson, 1994). They concluded, based on evidence from previous studies, that small projects based in a single ward or unit had more chance of success than large scale projects. In common with Titchen and Binnie (1993), Sparrow and Robinson (1994) did not focus on collaboration of participants as co-researchers as key to the success of Action Research. This is because studies critiqued, such as Lathlean (1986), Davies (1988) and McCaugherty (1992) had an evaluative rather than Action Research framework, reflecting an evolving understanding of the Action Research paradigm in nursing research. In concluding their analysis, Sparrow and Robinson (1994) asserted that Action Research participants needed to be aware of the need for change and be generally committed to the process. They asserted that nurses as researchers did need "knowledge and conviction" to argue the merits of Action Research in a localised context, incorporating the enablers and barriers to the project being successful (Sparrow & Robinson, 1994, p. 354).

In their review of action research in nursing, Munten et al. (2010) examined 21 Action Research studies with no date parameters. The intention was to define what was known about Action Research as a vehicle for implementing evidence-based practice. While they viewed Action Research as promising in this regard, Munten et al. (2010) also noted benefits from a participatory approach to Action Research. Nurses and patients were empowered by participation. Patients felt a sense of control over their health, particularly those with chronic disease. Munten et al. (2010) hypothesised that the opportunity for stimulation and professional development offered by Action Research projects may be an antidote for some nurses leaving the profession.

The work of Barrett and Taylor (2002) was one example of a growing awareness of participation as a dimension of Action Research. In this seminal study, a post-natal support group was established for new mothers at a busy metropolitan hospital. Through the ritual of tea and cake, women were able to form relationships with the midwives and each other. In this supportive environment, information and resources

were available to assist with the transition to motherhood. Barrett and Taylor (2002) also addressed the challenges and rewards of the research process, particularly the inquiry group. Highlighted was the management of power and changing relationships through a democratic approach and the reflexivity of the researcher in responding to a dynamic research environment.

A study by Bish et al. (2013) reflects the evolution of participation as a dimension of Action Research to Participatory Action Research as a discrete methodology suitable for nursing research. The aim of using PAR was as a catalyst for change and reflection on practice, to encourage self-evaluation and collaborative problem solving. Five 'co – researchers', Directors of Nursing of hospitals in rural Victoria, met to "consider issues for nursing leadership in the rural context and identify issues that may impact on strategies to foster nurse leadership in rural hospitals" (Bish et al., 2013, p. 287).

A Participatory Action Research study by Robinson et al. (2017) involved two residential aged care facilities in Tasmania as the setting. The aim of this project were threefold; "to support large-scale inter-professional student clinical placements, positively influence students' attitudes toward working in aged care and drive the development of a high-performance culture capable of supporting evidence-based aged care practice" (Robinson et al., 2017, p. 647). Congruent with an intended outcome of critical subjectivity (Heron & Reason, 1997), this was a complex, six phase program design that collected and evaluated qualitative and quantitative data from students, mentors and all stakeholders. Data analysis informed subsequent phases of the study. The outcome of this study was "a comprehensive approach to building capacity and capability in aged care and….a suitable model for the establishment of teaching aged care facilities across Australia" (Robinson et al., 2017, p. 678).

In consideration of the methodological issues identified in previous studies, recommendations made by Wong et al. (2016) and Rohatinsky et al. (2017) are reflected in the design, implementation and evaluation of the PPMP. The PPMP collected participant demographics and engaged an inquiry group to inform program design. A structure for the selection and preparation of mentors is clearly identified.

The mentor preparation day included comprehensive information on the structure and function of the PPMP including the role of mentors and academic staff. The methodology of the PPMP is explicit and data collection and analysis methods are explained and justified. The challenges and barriers to the success of the PPMP are an important component of the discussion chapter of this thesis so that learnings can be applied to other studies.

3.5   Cooperative Inquiry

The epistemology of Cooperative Inquiry extends the idea of participatory approaches to Action Research to a partnership approach where participants collaborate in every aspect of the project. Cooperative Inquiry is a highly social process where people with a common concern come together to learn, to expand their perspective on an issue and often to facilitate change (Heron & Reason, 2008, p. 3). The nature or subject of the inquiry, the structure of the cycles of reflection and action, how the knowledge generated is published and applied to future practice should be agreed to by all inquirers in an environment of reflexivity (Heron, 2014).

The language of Cooperative Inquiry does not include the concepts of researcher and subject. The egalitarian term "inquirers" is used, and if researchers are embedded in the inquiry their role could be described as "initiating facilitator" (Heron, 2014, p. 2). The highly democratic philosophy inherent in Cooperative Inquiry may be suitable for projects focussing on empowering health consumers and bringing together stakeholders and professional groups with differing levels of expertise.

For the candidate, the concept of 'co-researching' with students in a partnership approach inspired the PPMP in a philosophical and practical sense (Heron & Reason, 2008, p. 3). The influence of Cooperative Inquiry can be seen, for example, in the independence of mentors in how they built and maintained relationships with mentees. This self-determination brought unanticipated challenges to the project and potentially impacted on project outcomes as some co-researcher (mentor) and mentee relationships were impacted (Magee et al., 2019).

Cooperative Inquiry also inspired a partnership approach resulting in the hope that co-researchers would if necessary act as a catalyst for change during the PPMP. Mentors

decided they wished to create a Facebook community as a way of communicating with each other and the candidate regarding project matters. Mentors shared their experiences participating with the understanding that they were involved in a process of 'co-creating' knowledge and that their feedback would inform the development of a future PPMP (Heron & Reason, 2008, p. 4).

3.6 Summary of the chapter

Chapter Three has explored Participatory Action Research (PAR) as the methodology used for the Pilot Peer Mentor Project (PPMP). In discussing PAR, Action Research and the influence of Cooperative Inquiry on the PPMP is also explored. PAR was chosen for this study for its democratic, collaborative principles, and embracing of change in practice as an outcome of the research process.

PAR as the methodology is embedded in all aspects of the study, including the research design, which will be addressed in Chapter Four.

Chapter Four – Research design and method

4.0   Introduction

This chapter contains firstly an explication of the research design, aiming to inform the reader of how this project could be replicated elsewhere if required. The second section is a discussion of ethical issues based on Williamson and Prosser (2002) and considers the National Statement on Ethical Conduct in Human Research (The National Health and Medical Research Council et al., 2007). Information on data collection and analysis feature in the research design so that their place in the chronology of the study can be clearly seen. Data analysis and data quality is discussed in detail in a discrete section of this chapter.

The planning, implementation, and evaluation of the PPMP occurred within cycles of action and review. The stages of review included feedback, reflection, and refinements to the project plan prior to moving onto the next stage. This ensured that the project remained dynamic and responsive to the mentors and mentees. A detailed discussion follows based on Figure One which illustrates the cycles of action and review and the primary activities within each stage. Figure One also places certain components of the method, for example data collection, within stages of the project