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Initial teacher education students' literacy: Factors that impact on literacy achievement of prospective pre-service teachers

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Initial Teacher Education Students' Literacy: Factors That Impact on Literacy

Achievement of Prospective Pre-Service Teachers

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Abstract

Strong literacy skills are a prerequisite for teachers. There is much contention about a perceived erosion of literacy skills in new teachers and how initial teacher education providers can ensure graduate teachers possess the literacy skills required for their teaching careers. This research investigated the factors that impact on prospective pre-service teachers' literacy achievement. A mixed methods approach was used to examine the relationship between student entry pathway, Post Entrance Literacy Assessment (PELA) score, perceptions of self-efficacy, and previous literacy experiences in a first year literacy unit for prospective primary and early childhood initial teacher education students.

Initially, in phase one, quantitative data was collected and analysed for a full cohort of students to establish the relationship between student entry pathway, Post Entrance Literacy Assessment (PELA) score, and their level of achievement in the first year literacy unit. In phase two of the research, semi-structured interviews were used to collect data from a small group of students about their feelings of self-efficacy and previous literacy experiences to further explain the findings from phase one. The phase two data was analysed and the results from both one and two were combined to address the central research question: What factors impact on prospective pre-service teachers' achievement in a first year literacy unit?

The findings of this research study are that prospective pre-service teacher entry pathway into an ITE course is a moderate predictor of their literacy achievement within their course; on-entry assessment scores are not a predictor of prospective pre-service teachers' future literacy achievement in an ITE course; high levels of literacy self-efficacy are evident in prospective pre-service teachers that demonstrate literacy achievement in their ITE course; and prospective pre-service teachers that demonstrated literacy achievement had all experienced at least some

positive previous literacy learning experiences. The results of this research have the potential to inform initial teacher education (ITE) course providers about how to support students to develop the literacy skills required for success in their teaching careers.

Table of Contents

List of Tables

List of Figures

Chapter One

Introduction

The focus of this research study was on prospective pre-service teachers' literacy competence. The term prospective pre-service teacher is used to refer to students who are enrolled in an initial teacher education course (ITE) or students who are seeking to be enrolled in an ITE. The first year literacy unit in which the research study took place included both students who were enrolled in an ITE course and students completing an enabling program who were seeking to be enrolled in an ITE at the study institution.

The purpose of this research was to investigate the factors that impact on prospective pre-service teachers' literacy achievement early in their initial teacher education course. This chapter presents an overview of the research study and its purpose, value and significance for initial teacher education. Ethical considerations and limitations of the research are discussed and the chapter concludes with an outline of the structure of the thesis.

1.1. Overview

Teachers require well-developed literacy skills. However there is ongoing concern about teacher literacy levels in Australia and the impact that low levels of teacher literacy on students in Australian schools (Buckingham, 2016). Attention has been given over a number of decades to ensuring graduate teachers have adequate literacy levels to meet the demands of classroom teaching, with varying degrees of success (Teacher Education Ministerial Advisory Group, 2014, p. 49). Despite this attention, there is continuing concern about teacher literacy. The introduction of the

Literacy and Numeracy Test for Initial Teacher Education (LANTITE) is one example of a policy implemented to address this concern. The federal government initiative requires prospective pre-service teachers to pass a literacy and numeracy test that is requisite to graduate from an initial teacher education (ITE) course. The introduction of common terminology for admission practices in ITE courses (Admissions Transparency Implementation Working Group, 2017) is another example of recent federal government initiatives to address these concerns about teacher literacy levels. As recently as October 2017 Tanya Plibersek (Plibersek, 2017), the Shadow Federal Minister for Education, addressed the Australian Council of Deans of Education regarding the concerns about teacher literacy, stating "I will be frank – I remain very concerned about the academic aptitude of some students being accepted into teaching education." (p. 2). This concern regarding the literacy aptitude of prospective teachers must therefore be addressed to ensure that all students accepted into initial teacher education (ITE) courses develop the literacy skills necessary to become effective classroom teachers.

1.2.Personal Statement

The motivation for this study stems from the researcher's work with undergraduate and prospective pre-service teachers over the last ten years at two Western Australia universities that provide ITE courses. The researcher has observed, through her work with prospective pre-service teachers, that achievement in literacy varies markedly within each cohort and that prospective pre-service teachers that begin a literacy unit with low scores on diagnostic assessment, or who are admitted into an ITE course without an Australian Tertiary Admission Rank (ATAR), do not necessarily fail to learn the key unit content or achieve high grades in the literacy unit.

It is these observations that lead to the researcher considering the central research question of "What factors impact prospective pre-service teacher achievement in a first year literacy unit?" This research study was undertaken to provide rigorous and comprehensive insight into this question within the context of the first year literacy unit the researcher coordinates and teaches.

1.3. Research Aims

The research study aims to investigate the factors that impact prospective pre-service teacher literacy achievement. The research further aims to make recommendations for the development of course content and support materials at the research institution to address the literacy learning needs of prospective pre-service teachers and for the process of selecting candidates for these initial teacher education courses.

1.4. Purpose of the Research

The purpose of this research is to address concerns regarding prospective pre-service teacher literacy levels by identifying the factors that impact literacy achievement in an ITE course using a mixed methods approach. Understanding the factors that impact literacy achievement in ITE courses, and to what extent these factors impact literacy achievement, will allow teacher educators to design units of study, and teaching and support materials, to meet the literacy learning needs of the prospective pre-service teachers currently enrolled in an ITE course as well as future ITE prospective pre-service teacher. Knowledge of the factors that impact literacy achievement in an ITE course will also allow ITE providers to select the candidates

most likely to succeed in developing the strong literacy skills required from prospective pre-service teachers and graduate teachers for entry into ITE courses.

1.5.Justification

The Federal government has recently introduced an initiative to test undergraduate teachers Australia-wide on the same literacy and numeracy content in a test referred to as the Literacy and Numeracy Test for Initial Teacher Education (LANTITE). This initiative highlighted the importance of undergraduate teacher literacy skills and forced initial teacher educators to reflect on how best to support prospective pre-service teachers to develop these skills and ensure success in the LANTITE and their teaching careers (Louden, 2015). The LANTITE has led to a renewed focus by education policy makers on the selection of candidates for initial teacher education courses and a review on how to prepare pre-service teachers effectively for the literacy demands of their future careers. This research study investigated the factors that impact prospective pre-service teacher literacy success in a first year literacy unit at the research institution to address these concerns about literacy levels in pre-service teachers, inform LANTITE preparation and literacy instruction within the ITE and inform the selection of ITE candidates.

1.6.Value and Significance

The value of this research lives in the original contribution it makes to ITE literacy education. This contribution may address media and policy concerns about poor literacy skills in prospective pre-service teachers and graduate teachers by highlighting the factors that impact prospective student teacher literacy achievement in the first year of their ITE course. This investigation will progress the discussion of

prospective pre-service teacher literacy skills beyond the current focus on the tightening of entry pathways into ITE courses and the need for increased ATAR cut-off scores for students entering an ITE course. The investigation will consider the more complex approach to the selection of prospective pre-service teachers called for by the Teacher Education Ministerial Advisory Group (2014) (Australian Institute for Teaching and School Leadership, 2013; Honan, Exley, Kervin, Simpson, & Wells, 2013). The research study will also address the need to focus on the professional learning of prospective teachers in regards to literacy to ensure these are addressed effectively so that all teachers possess well-developed literacy skills. A focus on the development of the requisite literacy skills for teachers will move beyond the current focus on the perceived deficiencies of teachers and student teachers (Honan et al., 2013) to identify strategies that build literacy competency for the classroom where it is needed.

This research is significant as it addresses the need to ensure prospective pre-service teachers develop highly competent literacy skills. It identifies common factors that impact prospective pre-service teacher literacy achievement within their course and may lead to the development of 'profiles' of prospective pre-service teachers who are most likely to meet the literacy requirements of an ITE course. The research findings will therefore help inform ITE course providers about how they can best support the prospective pre-service teachers who enter their ITE courses by identifying the factors that both positively and negatively impact ITE prospective pre-service teacher literacy achievement.

The research is timely as it provides ways to identify prospective pre-service teachers who may be 'at risk' of not meeting the literacy competency requirements imposed by the LANTITE through examination of the factors and how these relate to achievement. It also provides insight into the factors that have positively or negatively impacted prospective pre-service teacher literacy skill development from the self-efficacy questions and qualitative interview data. Finally, the research informs the development and delivery of ITE course materials to ensure that, irrespective of a prospective pre-service teacher's entry literacy skills, ITE courses are able to support prospective pre-service teachers to exit their course with the literacy skills required for success in their teaching career.

1.7. Research Questions

The central research question to be addressed is: What factors impact on prospective pre-service teachers' achievement in a first year literacy unit?

The sub-questions are:

1. What is the relationship between a prospective pre-service teacher's entry pathway and his/her achievement in a first year literacy unit?

2. What is the relationship between a prospective pre-service teacher's Post Entrance Literacy Assessment (PELA) results and his/her achievement in a first year literacy unit?

3. What is the relationship between a prospective pre-service teacher's perceptions of self-efficacy with literacy and his/her achievement in a first year literacy unit?

4. What is the relationship between a prospective pre-service teacher's previous experiences with literacy and his/her achievement in a first year literacy unit?

1.8. Research Context

The research study was conducted within the context of a first year literacy unit for prospective and undergraduate pre-service primary and early childhood education teachers at the research institution. The research was conducted using a two phased mixed methods approach. The initial, quantitative phase of the research study involved using data generated from the administration of the literacy unit to analyse the impact of prospective pre-service teacher entry pathway and Post Entrance Literacy Assessment (PELA) results on their literacy achievement within the unit.

The data used in the quantitative phase is generated for each cohort that studies the unit from the administration of the PELA at the beginning of each semester. Completing a PELA is a requirement for all first year students across all schools within the university. The PELA assesses students' post university entrance literacy skills in reading, writing and spelling and is administered centrally by the Academic Enabling and Support Centre (AESC). The AESC are responsible for the marking and communication of PELA results to students. The AESC also provide follow up support for students identified as below the required literacy benchmark on the PELA. The subsequent qualitative phase of the research was conducted with the prospective pre-service teachers who had demonstrated high literacy achievement within the first year literacy unit and had indicated their willingness to be contacted to participate in phase two of the research study on the phase one consent form.

1.9. Ethical Considerations

This research study aims to maintain the highest possible standard of ethical conduct. Ethical conduct was ensured by attending to the Human Research Ethics protocols of the research institution, taking clear steps to ensure the security and confidentiality of all research data and implementing measures to address the dual and unequal relationship with prospective pre-service teacher participants in the research. Further detail about how the research study addressed each of these ethical considerations is provided under the headings below.

1.9.1. Human Research Ethics

Ethics approval was sought and granted from The University of Notre Dame Australia Ethics Committee (attached as appendix 1). Prior to data collection in each phase of the research, participants were provided with written information about the research study on a University of Notre Dame Participant Information Sheet pro-forma (attached as appendix 2 and 3) and informed consent was obtained in writing using The University of Notre Dame Consent Form pro-forma (attached as appendix 4 and 5). Participants were provided with a copy of the participant information sheet and consent form in each phase of the project for their own records, although many prospective pre-service teachers did not take a copy with them and those left were reused or recycled as appropriate.

No reference to individuals was made in either phase one or two research data and every effort has been made to ensure no individual was identifiable within this final report. The phase one quantitative data was de-identified before it was imported into SPSS so that no prospective pre-service teacher names or prospective pre-service teacher numbers were integrated into this data. The phase two qualitative interview

recordings were labelled with a number and date of the interview to eliminate the use of names and numbers that may lead to the possible identification of individual participants based on their responses.

Participants were free to withdraw from the research at any time, and this was explained to them in the Participant Information Sheets and in person during phase one and two data collection. All contact, both via email and telephone, inviting prospective pre-service teachers to be interviewed in phase two of the project made it explicitly clear that prospective pre-service teachers could decline to participate in the phase two qualitative data collection even after indicating their willingness to be contacted regarding this phase of the project on the phase one consent form. A copy of the text from the email and SMS contact made with phase two participants is attached as appendix 6 to demonstrate this.

1.9.2. Confidentiality

All data is stored securely, with hard copies stored in a lockable cabinet at the research institution and other data stored in password protected computer files on the researcher's personal lap top computer. All identifying data, such as signed consent forms, is stored under these conditions but separated from other data. Only de-identified data was used during data analysis in both phase one and two to eliminate potential bias by the researcher and to ensure de-identified data remained anonymous.

1.9.3. Dual and Unequal Relationships

The researcher was aware of her dual role as researcher as well as unit coordinator and tutor of the first year literacy unit in which the research took place. In

order to address the dual relationship, prospective pre-service teachers were informed that they could choose to withhold their PELA results from the research data when the PELA was administered and again when consent to use the PELA was requested. The dual and unequal relationship was further mediated by approaching prospective pre-service teachers for consent to use the data generated from the PELA in the research after both the test administration in week one and communication of results in week five was completed. Prospective pre-service teachers were free to choose not to consent to the inclusion of their PELA data in the research however, as the PELA is a university and unit requirement all prospective pre-service teachers were required to complete the PELA itself. The Academic Enabling and Support Centre (AESC) staff were responsible for PELA administration and follow up. Clear separation of these tasks from the researcher allowed prospective pre-service teachers to meet the unit requirement associated with PELA without compromising their right to choose whether or not to participate in the research study.

The unequal relationship between the researcher and the prospective pre-service teacher participants was further managed by ensuring all grades for the unit were finalised and submitted to the Dean of the School of Education prior to phase two data collection. This measure ensured it was clear to prospective pre-service teachers that participation at this stage of the research could not impact their unit grade in any way. The delay in the scheduling of interviews also meant that most participants had received their grades for the first year literacy unit ensuring they could not perceive that there would be any benefit to their unit grade in participating in a phase two interview. The phase two data collected from the self-efficacy

questions and semi-structured interviews was the only research data that is not generated from the regular administration of the unit.

1.10. Limitations

The potential limitations of this study are that it was conducted with a cohort of 61 prospective pre-service teachers from a smaller second semester cohort studying the first year literacy unit, with many of these prospective pre-service teachers coming through the research institution Foundation Year program. However, this cohort still produced a broad spread of achievement within the unit and represented a variety of entrance pathways, self-efficacy ratings and previous literacy experiences. This study cohort is representative of the broad range of prospective pre-service teachers entering ITE course as identified by AITSL(2015).

1.11. Definitions

1.11.1. Initial Teacher Education (ITE)

Initial teacher education refers to undergraduate and postgraduate programs of study that lead to a qualification that enables a person to register as a teacher in Australia.

1.11.2. Post Entrance Literacy Assessment (PELA)

On-entry assessment of literacy skills (spelling, reading and academic writing) designed to identify students entering university who require support to meet the literacy demands of university study.

1.11.3. Literacy and Numeracy Test for Initial Teacher Education (LANTITE)

An Australian Federal Government initiative to test undergraduate teachers Australia-wide on literacy and numeracy skills prior to graduation from an ITE

course. Graduate teachers must pass this literacy and numeracy test to gain registration to teach in Australia therefore, they will not be able to gain employment as a teacher without successful completion of this test.

1.11.4. Academic Enabling and Support Centre (AESC)

The Academic Enabling and Support Centre is responsible for enabling programs, general academic support, disability support, outreach and research at the research institution. AESC staff oversee the PELA process across the Schools within the university and provide follow up programs tailored to the needs of students in each School.

1.11.5. Prospective Pre-Service Teacher

The term prospective pre-service teacher is used to refer to students who are enrolled in an initial teacher education course (ITE) or students who are seeking to be enrolled in an ITE. The first year literacy unit in which the research study took place included both students who were enrolled in an ITE course and students completing an enabling program who were seeking to be enrolled in an ITE at the study institution.

1.12. Structure of Thesis

This thesis is organised into six chapters. An overview of these chapters is shown in table 1.1. An overview of the content of each chapter is provided in the following section titled 'Chapter Summaries'.

Chapter	Content
Chapter One	*Introduction*
Chapter Two	*Literature Review*
Chapter Three	*Methodology*

Chapter Four	*Results*
Chapter Five	*Discussion and Conclusion*

Table 1.1 *Overview of the Thesis Structure*

1.13. Chapter Summaries

Chapter One provides an introduction to the thesis and an overview of the issues that informed the research study. It details the aims, purpose, value and significance of the research for prospective pre-service teachers and ITE providers. The research questions explored in the research study are documented and the context in which the research was undertaken is explained. Justification for undertaking the research study is included along with the discussion of the ethical considerations and limitations of the research. Key terminology utilised in the thesis is defined and a brief overview of the content of each chapter is given.

Chapter Two investigates the existing body of research regarding prospective pre-service teacher literacy achievement. It is organised using a conceptual framework that highlights the key area to be investigated by the research study of entry pathway, on-entry assessment, literacy self-efficacy and previous literacy experience. The literature reveals a continuing concern about graduate teacher literacy skills and recent initiatives, such as LANTITE, that have been introduced in an attempt to address these concerns. This chapter identifies the limitations of the existing research and the need to progress these concerns beyond the current initiatives to identify evidence based approaches to assist ITE to develop the literacy skills required to develop into effective teachers.

Chapter Three outlines the methodological approach taken to the research study to gather the data to address the research question. The theoretical framework that underpins the research and the justification for adopting this theoretical framework are discussed. The theoretical framework through which the research process and results were viewed is that of pragmatism, with an emphasis on drawing from both quantitative and qualitative research methods to find 'what works' to fully explore the central research question. The methodology also includes details of the sample and sampling used in the research study, data collection methods and the methods used for data analysis. Information in the methodology is organised into the two phases of the mixed methods research process utilised in the project.

Chapter Four presents the results of the data analysis and findings of the research study. The research findings are organised into the two phases of data collection and further organised to reflect the answers to each of the four research sub-questions. The findings of research sub-question one and two are discussed first as they were addressed in phase one of the research study. The findings of research sub-question three and four, addressed in phase two of the research project, are then presented. Finally, the results of the data analysis of each phase of the project are discussed together to provide a comprehensive understanding of the research findings to fully address the central research question.

Chapter Five provides a discussion of the research findings and a conclusion to the thesis. This discussion draws conclusions based on the results of the phase one quantitative data collection and analysis, the phase two qualitative data analysis and the results of the analysis of the combined data. Chapter Five then presents a

summary of the conclusions revealed by the research findings in both of the phases of the research study to respond fully to the central research question. The limitations of these findings and recommendations for future research into prospective pre-service teacher literacy achievement are then discussed. A concluding statement in response to the central research question is then presented and the implications of the research findings are articulated in a final closing statement.

Chapter Two

Literature Review

2.1.Introduction

This chapter reviews the existing research related to the central research question of: What factors impact on prospective pre-service teachers' achievement in a first-year literacy unit?

The existing body of research has been evaluated to identify what is currently known about prospective pre-service teachers' literacy competence and where further research efforts are required. The unique contribution of this research study to the existing body of knowledge is also discussed.

An understanding of the term literacy must first be established. This is complicated by the broad nature of the term literacy, which has been used to describe a variety of different skills and understandings by different authors, in different contexts, at different times in history. The United Nations Educational Scientific and Cultural Organization (UNESCO) (2006, p. 22) defines literacy "as an active process of learning involving social awareness and critical reflection, which can empower individuals and groups to promote social change", they also emphasise the vital role literacy plays in empowering individuals and groups. In his 2007 review of literacy education in schools P. Freebody (2007) explained that a contemporary understanding of literacy focuses on how people "use and produce symbolic materials fluently and effectively". Winch, Johnston, March, Ljungdahl, and Holiday (2014, p. XXXV) reinforce Freebody's contemporary understanding of literacy by stating literacy is

"not merely a single skill, or even a set of skills, but a way of operating in the world with a variety of texts to get things done and achieve our purposes." The broad nature of a contemporary definition of literacy is also evident in the Australian Curricluum Assessment and Reporting Authority (2014, p. 1), which states "students become literate as they develop the knowledge, skills and dispositions to interpret and use language confidently for learning and communicating in and out of school and for participating effectively in society."

The discussion of literacy is further complicated by terms such as functional literacy, digital literacy and academic literacy that are used to distinguish between various uses of literacy skills and knowledge. On-entry literacy scores, for example, tend to focus on a narrower understanding of literacy as a set of requisite skills such as reading, writing and spelling. This definition of literacy focuses on functional literacy, which is defined by UNESCO (2006) as the ability to use literacy to function individually and as a member of a group and community, as well as for the further development of the individual, group and community. In contrast, the discussion of prospective pre-service teacher literacy self-efficacy focuses on a broader definition of literacy, more aligned with the contemporary definitions of UNESCO (2006), Freebody (2007), Winch et al. (2014) and the Australian Curricluum Assessment and Reporting Authority (2014) related to the fluent and effective use and production of texts. While the review of the current research related to prospective pre-service teacher previous literacy experiences goes on to highlight the unique demands of academic literacy that focuses on the formal processes of making and sharing meaning used in different disciplines in classrooms in schools or universities

(Kalantzis, Cope, Chan, & Dalley-Trim, 2016). These multiple approaches to understanding literacy are explored further within this literature review.

There has been a range of research conducted into pre-service teacher literacy, and multiple factors have been identified in this research that impact on prospective pre-service teachers' literacy competence (Freebody & Freebody, 2017; Honan, Exley, Kervin, Simpson & Wells, 2013). This research study focused on investigating four key areas that impact prospective pre-service teachers' competence in literacy and informed the conceptual framework for the research study. These key areas are prospective pre-service teachers':

1. Entry pathway

2. On-entry literacy scores

3. Literacy self-efficacy

4. Previous literacy experiences.

This conceptual framework is shown diagrammatically in Figure 2.1.
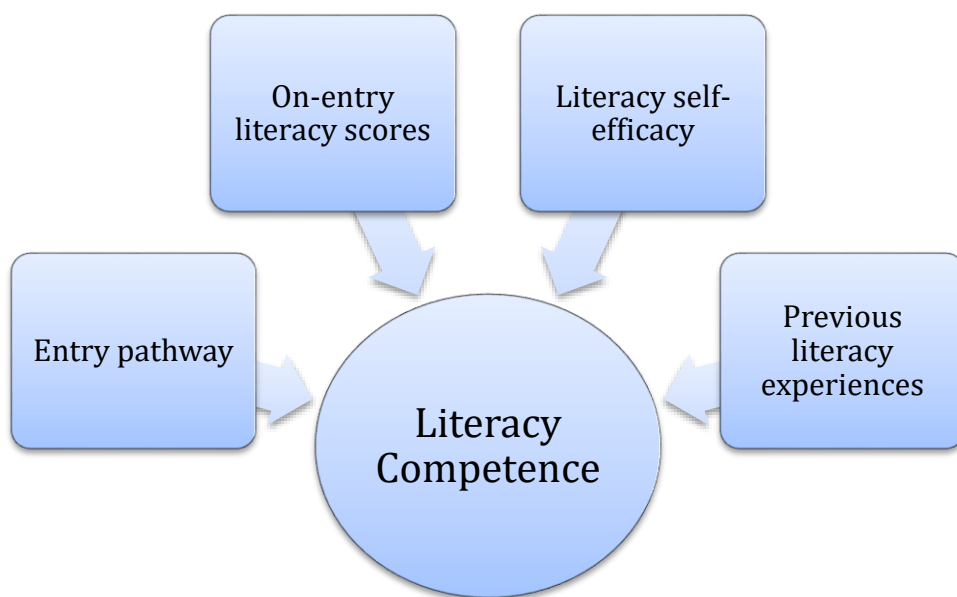
Figure 2.1 Conceptual framework of factors that impact on prospective pre-service teachers' literacy competence

2.2.Entry Pathway

The most recent *Initial teacher education data report 2017* by the (Australian Institute for Teaching and School Leadership, 2017) provided an analysis of the relevant available data on initial teacher education (ITE), prospective pre-service teachers, and courses to inform research and policy development on ITE entry pathways . The report explained that it "aims to inform ongoing research and policy development by providing data about ITE in an easily accessible single resource. By highlighting, describing and analysing data specific to teacher education in Australia, the report also contributes to the broader public discussion of issues related to ITE" (AITSL, 2015, p. iii). The *Initial teacher education data report 2016* (AITSL, 2016) identified a 67% increase in the number of domestic students entering an ITE course without an Australian Tertiary Admission Rank (ATAR) and an increase in the number of students entering a course with an ATAR in the 30-50 and 51-60 bands (2015). The most recent *Initial teacher education data report 2017* (AITSL, 2017) highlighted that in 2015, 42% of undergraduate ITE students who were admitted to a course using their secondary school results had an ATAR of 70 or below (p. 9). While there is little change in the ATARs of beginning ITE students between the 2016 and 2017 reports, the *ITE data report 2017* (AITSL, 2017) identified a trend of increasing numbers of students with ATARs in the lowest bands up from 25% in 2006 to 42% in 2015 (p.9). The report acknowledges that this trend can be observed across all university programs to some extent, with a similar proportion of students beginning across all university courses with an ATAR below 70 in 2006 (21%); however, the figure across all courses is significantly lower in 2015 at 26% (AITSL, 2017, p. 22).

27

The increasing number of students admitted to university with low ATAR scores as described above can be seen diagrammatically in Figure 2.2 and Figure 2.3 below.
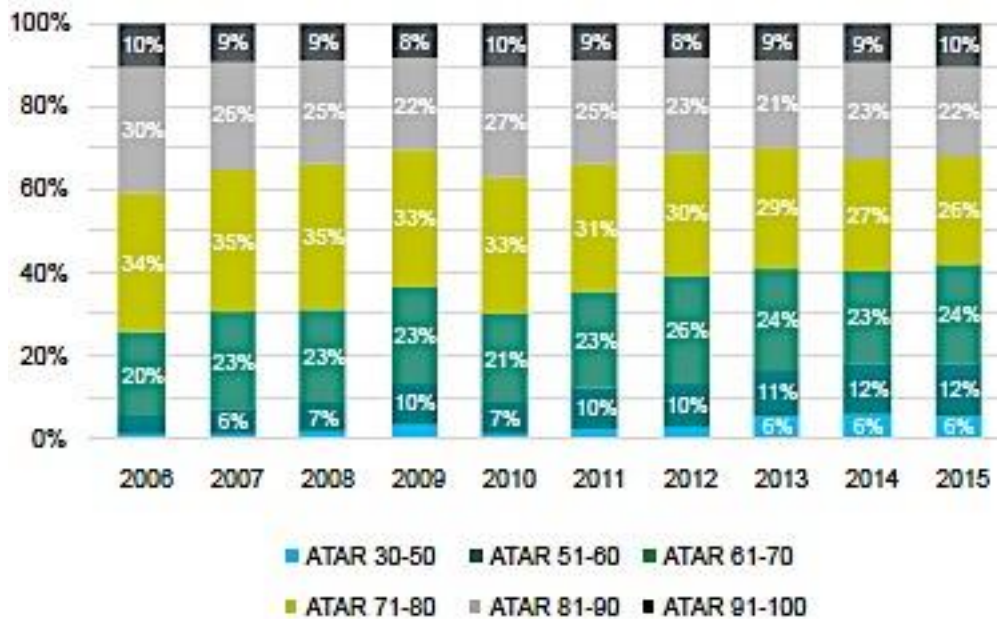
Source: Customised data provided by the Department of Education Research and Economics Group.
Note: Data labels were omitted where the percentage was less than 5%.

Figure 2.2 Undergraduate ITE student ATAR scores in bands, 2006 - 2015 *(*only shows those students that entered an ITE course based on their secondary study results)* (AITSL, 2017, p. 22).
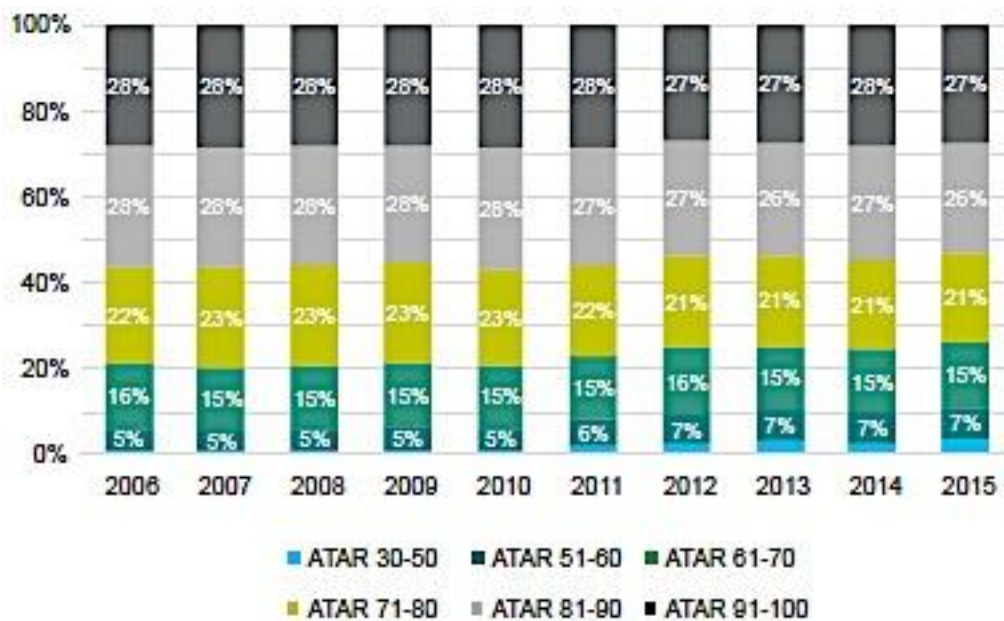
Source: Customised data provided by the Department of Education Research and Economics Group.
Note: Data labels were omitted where the percentage was less than 5%.

Figure 2.3 Undergraduate student ATAR scores in bands (All fields of study), 2006 -

2015 *(*only shows those students that entered an ITE course based on their secondary study*

results) (AITSL, 2017, p. 23).

The data provided in the ITE data reports (AITSL, 2015; 2017) are valuable in

understanding the entry pathways of prospective teachers. However, the data do not

examine the reasons for these changes in the characteristics of ITE students or the

reasons for the increase in the number of students entering ITE courses with low

ATARs at a significantly higher rate than other university courses. This data for

disadvantaged students also focuses on students' entry point into an ITE course rather

than attempting to assess their level of competence at the end of their ITE course,

which is arguably more relevant and important.

The changes observed in ITE entry pathway raise the issue of the need to

review the accreditation of ITE to ensure high quality teaching graduates, as

highlighted by the Teacher Education Ministerial Advisory Group's (TEMAG)

(2014), report *Action Now: Classroom Ready Teachers*. The TEMAG (2014) report

identified limitations of the current selection processes for inclusion into an ITE

course, including practices that make the selection process less transparent such as

forced offers and the awarding of bonus points. Forced offers refer to a category used

in entry pathway reporting for students that have not met standard admission

requirements. Examples of circumstances in which forced offers may be used include

students who have experienced personal illness or disability, financial hardship or

disrupted schooling (Admissions Transparency Implementation Working Group,

2017). Bonus points (which will in future be referred to as adjustment factors) are

allocated to students for factors such as equity, location, subject relevance and being an elite athlete or performer and are used to adjust a student's selection ranking (Admissions Transparency Implementation Working Group, 2017).

These practices of inflating entry scores make it difficult to identify an accurate ATAR cut-off for course entry at some institutions and add to concerns about ITE student selection . The TEMAG recommend the need to use a sophisticated approach to prospective pre-service teacher selection that ensures the best candidates enter ITE courses, and that institutions providing ITE courses make the process of prospective pre-service teacher selection transparent ((Teacher Education Ministerial Advisory Group, 2014). Australian Council for Education Research (ACER) (2016) support such an approach, citing the example of the multiple admissions tools for medical courses as one example of this more sophisticated approach, stating "the practice of using multiple tools in an admissions process does exist and research suggests this constitutes best practice within Australian higher education." (p. 2). Admission practices into ITE courses vary across tertiary institutions; for example, at the research institution potential ITE pre-service teachers are interviewed and assessed for suitability for entry using a range of measures. The application and interview process used at the research institution is a departure from a traditional singular focus on ATAR score to the more sophisticated approached advocated by the TEMAG. Further investigation of the characteristics that successful pre-service teachers, and ultimately graduate teachers, possess is needed to ensure all institutions are attending to these as part of their prospective pre-service teacher selection processes.

Concern about prospective pre-service teachers' entry pathways into ITE courses has grown over recent years (Teacher Education Ministerial Advisory Group, 2014). As Honan et al. (2013) highlight, this concern has continued to grow despite a lack of data "government reports, reviews and recommendations continue to assert (a) that Australian teachers have poor personal literacy skills" (p. 20). This concern is informing policy development, such as the implementation of the Literacy and Numeracy Test for Initial Teacher Education (LANTITE) and the decision to publish Year 12 scores for students entering an ITE course (2013). There is limited data however, to suggest that entry pathway into an ITE course has a determining effect on prospective pre-service teachers' success and retention rates.

The recent report *Dropping Out: the benefits and costs of trying university* (Norton, Cherastidtham, & Mackey, 2018) highlights an increased risk of students across universities and courses not completing their university course if they enter with an ATAR below 60. However this pattern has not been shown to be definitively replicated in ITE courses. Some research data suggest that ITE students with the highest ATAR scores (between 91 and 100) are those who do not continue into a second year of study (in ITE or any field of study) at a greater rate than the average for all fields of study across this high ATAR group (Australian Institute for Teaching and School Leadership, 2013). In 2012, 86% of students in this top achievement band continued into the second year of an ITE course and 91% continued on to a second year of study overall, while the average across all university courses was 93% (AITSL, 2015). A similar pattern was also demonstrated in 2011 with slightly fewer students (84%) continuing in their ITE course while 93% continued onto a second year of study across all university courses (AITSL, 2015).

The ITE data report 2017 (AITSL) reveals a change from these earlier figures with students in the highest two ATAR bands of 81-90 and 91-100 both recording the highest retention rates in their ITE course with 84% of students continuing into their second year of study. The latest report does not provide a comparison between ITE retention rates with an average across all courses in fact it only compares these with nine other courses in total. The data on ITE student retention is limited by the omission of a comparison to retention rates across all university courses and does not reveal the reasons for higher retention rates of students entering an ITE with a high ATAR in 2017.

Further research is needed to identify the factors impacting on retention rates in ITE courses, and to better understand the change in retention rates in 2017. Data collected to date present little conclusive evidence that the entry pathway of ITE students is a significant factor in the retention and success within their course of study or in developing the requisite skills for their teaching careers. The Australian Council for Education Research (ACER) (2016) highlight the need to progress beyond the current focus on entry pathway to a system focused on better matching of prospective students to the skills they will require for successful course completion calling for "a link between the academic expectations relating to a particular degree, and the selection criteria used to choose applicants for that degree" (p. 5). Research into the factors that impact ITE student retention and success would be valuable in shaping future ITE policies such as the implementation of the LANTITE and the publishing of ATAR scores and in ensuring it is the most suitably skilled students that enter ITE courses.

AITSL (2015) also reports on ITE prospective pre-service teacher success rates by recording the number of units passed as a percentage of the number of units studied. Success rates for ITE students are higher than the average for students across all fields of study across the decade between 2006 and 2015, with only a 1% drop in success rates across all courses and a 2% decrease in ITE students' success rates during this time (AITSL, 2017, p. 46). In 2015 success rates for ITE students were 90% in comparison to a success rate across all fields of study of 87% (Australian Institute for Teaching and School Leadership, 2015). The 2015 success rates are the same as the 2014 and 2013 results with a success rate for ITE students of 90% compared to 87% for students across all fields of study (2015, p. 49). These results are further analysed by student entry ATAR scores and only those students with an entry ATAR of 30-50 achieved a success rate significantly lower than the 87% success rate across all fields of study with a success rate of 78% (AITSL, 2017, p. 50).

Other factors identified in the 2017 *ITE data report* that reduced student success rates were part time study and external study that resulted in success rates of 77% and 82% respectively (AITSL, 2017, p. 51). The success rate data indicates that very few prospective pre-service teachers have difficulty completing units of study within their course, with even those students with medium to low entry scores completing units at a comparable rate to the general undergraduate population. Research into the reasons why ITE students complete units of study at a higher rate than the overall student population, and how students entering with a score in the ATAR bands of 51-60 and 61-70 achieve a success rate so close to the average, could

inform prospective teacher selection and instruction processes to further increase ITE student success rates.

Caution must be exercised therefore, in viewing the publication of ITE student entry pathway data as a solution to concerns about ITE prospective pre-service teacher selection. Recommendation 11 from TEMAG (2014) states "Higher education providers publish all information necessary to ensure transparent and justifiable selection processes for entry into ITE programs, including details of ATAR bonus schemes, forced offers and number of offers below any published cut-off." (p. xv). There is little evidence to suggest this focus on entry pathways will address student retention and success rates, and ultimately teacher effectiveness. The data indicates that, in fact, the students with the highest ATAR entry scores have been in the past years less likely to achieve completion of an ITE course. The reasons that students with the highest ATAR scores do not complete an ITE may be complex and varied and beyond the bounds of this thesis to investigate. The data on ITE course completion demonstrates the need to investigate factors beyond entry pathway to address concerns about the quality of ITE prospective pre-service teacher and graduate teachers to ensure they are all well prepared for the demands of the teaching profession.

2.3. On-Entry Literacy Scores

On-entry literacy scores tend to focus on a narrow understanding of literacy focused on identifying if prospective pre-service teachers have the skills required for their university course, rather than a broader attempt at "capturing … interactions that respect learners' diverse backgrounds and skills." (Cummings-Potvin & Sanford,

2015, p. 24) and the contemporary definition of literacy used more widely in literacy education. This narrow understanding of literacy means on-entry literacy scores may not be effective indicators of prospective pre-service teachers' literacy competencies. Such a narrow approach to assessing prospective pre-service teacher entry literacy competencies may contribute to the media and community concerns mentioned previously regarding teacher literacy.

Weldon (2018, p. 72) suggests "Scholarly articles and, indeed, media articles, in a field that is regularly the subject of media interest would benefit from a more cautious assessment of the issues" in his work on early career teacher attrition. Finger (2014, p. 2) goes even further with his recommendation that "we have to think about what we consider a world-class education" is when considering the education of prospective pre-service teachers. These comments highlight the need to question the use of on-entry literacy scores as effective measures of prospective pre-service teachers' literacy competencies. Barnes and Cross (2018) and Finger (2014) point out that the issues surrounding teacher quality, and graduate teacher literacy competence, are far more complex than arbitrary minimum on-entry literacy requirements.

Even prior to the current concern regarding prospective pre-service teachers' literacy levels there has been a growing trend for universities to measure undergraduate student entry literacy skills (Bahr, 2016). On-entry literacy assessments take a variety of forms and are used across disciplines. These assessments ensure students at risk of encountering difficulties with the literacy demands of university study are identified and offered support to improve their literacy skills. Palmer, Levett-Jones, Smith, and McMillan (2014) explain that PELAs are used, in part, due

to increased demand for university places and diversification of the profile of university students. The diversification of students is evident in the variety of entry pathways of ITE students documented by AITSL (2017).

The diversification of university students has lead to many students that may not have attended university in the past now having the opportunity to enroll in university. Leese (2010) findings from interviewing a diverse population of students 'new' to university study suggests that it is a lack of cultural capital that disadvantages these students in regards to having the requisite literacy skills at the beginning of their university careers. She explains cultural capital relates to social class, the student's family background and the commitment to education in these backgrounds (Leese, 2010). The expectations of students from backgrounds who previously did not participate in higher education often differ to those of staff and other students and these differences in expectations can disadvantage these 'new' students. Exley, Walker, and Brownlee (2008) compared the entry characteristics and epistemological beliefs of prospective pre-service teachers' between an established inner city university campus and a new satellite campus of the same institution and found despite differences in demographics "the two groups were more alike than dissimilar on their beliefs about knowing and learning" (p. 8). These authors found a significant difference in epistemological beliefs in only one measure, where it was the students at the satellite campus, those less likely to have traditionally attended university, who held more sophisticated understandings of the nature of knowledge (Exley et al., 2008). Further research into the expectations and experiences of these students new to university and the impact of these expectations and experiences on their achievements is needed to ensure that students who are new to university can

36

overcome any disadvantage and exit an ITE course with the requisite literacy skills for career success. This research investigates the literacy achievement of prospective pre-service teachers who report they are the first to attend university in their families to examine the patterns in literacy achievement for prospective pre-service teachers new to university study at the research institution.

In a survey of Australian universities Dunworth (2009) found a growing trend in the use of Post Entrance Literacy Assessments . Dunworth (2009) also found an overall perception that PELAs were useful in ensuring students developed an understanding that "Getting into uni is the beginning, not the end of language development" (p. A7). While this research has established a need for, and the patterns of use of PELAs, it is not clear from the data what relationship PELA results have to prospective pre-service teachers' literacy achievement in their course of study. This research investigates how PELA results relate to prospective pre-service teachers' literacy achievement in the first year of their ITE course. It also considers what other factors impact literacy success in order to determine how best to utilise PELA data to support the development of literacy competence and determine how universities can utilise PELA results as a diagnostic tool. The investigation of the relationship between PELA results and prospective pre-service teachers' literacy competence in this research study seeks to clarify how best to use the PELA data that is currently generated. These recommendations may be used to target support for literacy development to those prospective pre-service teachers that need it most at the research institution, and potentially at other institutions. This clarification will move the focus of the discussion of ITE literacy competency to the development of literacy skills rather than the current focus on the assessment of these skills.

37

Similar to the focus on prospective pre-service teachers' entry pathway, there is limited evidence that low literacy rates of entrants to ITE courses are widespread or that they ultimately result in lower literacy in graduate teachers. In research conducted with first year nursing students, who also require sound literacy skills, Palmer et al. (2014) found that on-entry literacy scores are variable between tasks and dependent on variables such as the available time and level of difficulty of the task, indicating on-entry literacy scores are not an effective measure of students' literacy skills. Thus it follows that low on-entry literacy scores do not necessarily result in lower literacy achievement in ITE courses or lower graduate literacy rates. Further research into the development of prospective pre-service teachers' literacy skills within the study of their course is needed to demonstrate how best to support these prospective pre-service teachers to plan for literacy tasks to ensure they develop the necessary literacy competencies for their teaching careers.

The qualitative research findings of this research seek to clarify how best to support the development of prospective pre-service teachers'literacy skills as they progress through their course of study to ensure they develop these skills to the required level to meet the demands of contemporary classrooms. Palmer et al. (2014) identified using a diagnostic literacy assessment as a way to "provide schools and faculties with a better understanding of their commencing cohorts' academic literacy entry profiles with respect to academic literacy, and hence enable them to target early support" (p. 76). Academic literacy skills refer to the more formal processes of making and sharing meaning used in different disciplines required for university study and understanding of the complexities of the teaching profession (Kalantzis et al.,

2016). These academic literacy skills vary significantly to the everyday literacy skills students may have developed in school.

Exley et al. (2008) also highlight the need to focus on "considering support that will enable all students to grow and develop into quality teachers" (p. 7) rather than a continued focus on the perceived deficits of current cohorts of prospective pre-service teachers. Ensuring a focus on PELA data as a diagnostic tool to target support for prospective pre-service teachers to increase their literacy competencies may be essential to ensuring pre-service teachers develop the literacy skills needed for classroom teaching. Palmer et al. (2014) go on to recommend further qualitative research to identify students' perception of the value of on-entry literacy assessment, their perceptions of the expectations of their level of literacy and the difficulty of the literacy tasks required of them. Further research is therefore warranted to investigate the predictive power of PELA results to identify prospective pre-service teachers who are at risk of not meeting literacy requirements at the completion of their course and how prospective pre-service teachers identified as having a deficit in skills in on-entry assessment can be supported to improve these skills.

On-entry literacy scores are considered a valuable tool to target and support prospective pre-service teachers at risk of not meeting graduate teacher literacy requirements but they cannot be used to reliably predict literacy success (Palmer et al., 2014). At best these scores may be most valuable to ITE providers for early identification of a cohort's literacy learning needs to ensure early targeted support is provided (Exley et al., 2008). Further research is therefore warranted to establish how on-entry literacy assessment can be used to identify what early support is needed to

ensure adequate graduate literacy skills in all prospective pre-service teachers. This research investigates what support pre-service teachers who achieved success in a first-year literacy unit felt they had received that had contributed to their success, the level of support they felt they needed as they progressed through their ITE course, and the support they thought they may need in the future to inform course development.

2.4. Literacy Self-Efficacy

There is little recent research into ITE literacy self-efficacy, although Bandura's (1977) early work highlights that self-efficacy is key to being able to control events and outcomes. Self-efficacy refers to an individual's belief that he or she can experience success in a particular endeavour and, as explained by Pastorelli et al. (2001), self-efficacy plays a key role in the goals and actions of individuals. In a recent study Shaw, Dvorak, and Bates (2007) summarise the impacts of teacher self-efficacy on student outcomes from successive research into Bandura's notion of self-efficacy. Their research highlighted increased organisation, planning, openness to new ideas, willingness to try new methods, enthusiasm for teaching, perseverance with struggling students and the tendency to be less critical as positive outcomes of teacher self-efficacy (Shaw et al., 2007). Beginning the development of high levels of self-efficacy in prospective and prospective pre-service teachers is critical to ensure all classroom teachers possess the self-efficacy required to replicate the positive effects identified by Shaw et al. (2007) in their future classrooms. High levels of literacy self-efficacy in prospective pre-service teachers is desirable to ensure they demonstrate these highly desirable qualities in their literacy instruction with future students and successfully meet all of the requirements of their ITE course.

There is a growing body of research into the role of self-efficacy in university students' performance that can inform practices in ITE. In a US study into the role of self-efficacy in ITE student performance on teacher licensure exams, Petchauer (2016) found that self-efficacy was instrumental in performance on these exams. In particular, this researcher identified the need "to design programs that will increase students' beliefs in their … capabilities because such beliefs have widespread implications on both the preparation and test-taking experience." (Petchauer, 2016, p. 186). Recent Australian research examining the factors that predict first year university student performance found a link between student self-efficacy and overall grades, explaining "The hypothesis that self-efficacy would be positively related to academic performance was supported. Students reporting high self-efficacy of achieving above average grades had significantly higher GPAs than students reporting low self-efficacy of achievement" (McKenzie & Schweitzer, 2001, p. 30). These findings highlight the need to address the issue of prospective pre-service teacher self-efficacy as an integral aspect of the course to ensure prospective pre-service teachers develop both the necessary skills for their teaching career and a belief that they possess the necessary skills and knowledge. Further research into prospective pre-service teachers self-efficacy with literacy and how best to develop prospective pre-service teachers' belief in their ability to succeed with literacy tasks is needed to ensure that low self-efficacy is not an obstacle to literacy competence.

Self-efficacy is closely related to Dweck's (2010) notion of a growth mindset which is characterised by the belief that intelligence is not fixed and can be developed. Teachers and parents who not only possess a growth mindset but model and teach this growth mindset to students can encourage a growth mindset in students.

Possessing a growth mindset increases feelings of self-efficacy and results in positive differences in how students approach learning tasks (Dweck, 2010). In their research into the effect of a growth mindset on students from low socio-economic backgrounds Claro, Paunesku, and Dweck (2016) established "a robust relationship between students' mindsets about intelligence and their academic performance" (p. 8667). They found that possessing a growth mindset had a significant effect on student outcomes at all socio-economic levels and for students in the lowest socio-economic group a growth mindset correlated with a performance on par with students in the highest socio-economic group (Claro et al., 2016). This research establishes the critical role of a growth mindset in students' performance and presents a challenge for all educators to "design and present learning tasks in a way that helps students develop a growth mindset, which leads to not just short-term achievement but also long-term success" (Dweck, 2010, p. 16). Research into the existing mindsets of prospective pre-service teachers and the effectiveness of interventions to help prospective pre-service teachers develop a growth mindset is therefore needed to ensure pre-service teachers' short-term achievement within their ITE course and their long-term success in their teaching careers.

Recent research investigating ITE self-efficacy with literacy found that pre-service teachers entered the ITE course at the study institution with high literacy self-efficacy, however, this did not necessarily correlate with high levels of literacy competence (Bostock & Boon, 2012). Bostock and Boon (2012) hypothesise that this finding may be due to factors such as inflated self-beliefs, limited exposure to complex texts for comparison purposes with their own literacy skills or a generational trend of increased self-appraisal (Bostock & Boon, 2012). The more complex nature

of academic literacy tasks, in comparison to the everyday literacy skills that students focus on developing in school (Kalantzis et al., 2016), is potentially one factor in pre-service teachers' over estimation of their literacy competencies. Whatever the reason for this discrepancy, it is important to have prospective pre-service teachers with high levels of literacy self-efficacy for the reasons identified above by Shaw et al. (2007). However this must be achieved while also ensuring high levels of literacy competency. One question remains therefore, what can be done to ensure graduate teachers have both strong literacy self-efficacy and corresponding high levels of literacy competence? Further research is warranted to examine this pattern of high rating of self-efficacy independent of literacy competency. It is vital to ensure prospective pre-service teachers develop both the self-efficacy required to positively impact on their students' literacy learning outcomes and to ensure that high self-efficacy is not substituted for high levels of literacy competency in graduate teachers. Efforts that focus on increasing prospective pre-service teachers' self-efficacy, without attending to ensuring high levels of literacy competency may reinforce the pattern observed by Bostock and Boon (2012) of high student self-efficacy but lower literacy competency. Both competence and self-efficacy are critical to ensure effective literacy outcomes for pre-service teachers and their future students. The goal of effective ITE literacy instruction must therefore be both the development of pre-service teachers' self-efficacy and literacy competency.

2.5. Previous Literacy Experiences

There is a perception that Australian students leave high school with inadequate literacy and numeracy skills for the demands of the workforce or further study, and an increase in media reporting of a decline in Australia's performance on international testing (Centre for Education Statistics and Evaluation, 2016). Outcomes

on the most recent *Progress in International Reading Literacy Study* (PIRLS) assessment program from 2011 ranked Australia 27th of the participating countries, making it the lowest ranked English speaking country (Meeks, Kemp, & Stephenson, 2014). Similarly, Meeks et al. (2014) identify that Australia's performance on the *Programme for International Student Assessment* (PISA) is also falling, although they suggest that changes in ranking may be influenced by the growth of participant countries. This finding does not account however, for the growing proportion of students ranked in the lowest three levels, increasing from 31.4% in 2000 to 35.8% in 2012 (Meeks et al., 2014). The more recent analysis *PISA 2015: Reporting Australia's results* documents further the decline in the performance of Australian students on the literacy tasks of the PISA over time (Thomson, De Bortoli, and Underwood (2017). The analysis highlights a decreasing number of students in the highest proficiency level and an increasing number of students in the lowest proficiency level for literacy skills. In 2000, 17% of students were placed in proficiency level six on the reading proficiency scale and only 12% achieved at or below level one. By 2015, the percentage of students achieving level six on this scale had dropped to 9% and the percentage of students performing at or below level one had risen to 17%. Figure 2.4, below, shows this concerning trend diagrammatically. Without addressing this trend of falling literacy performance, Australia faces the prospect of a less literate workforce in all domains not the least in graduate teachers and the wider the education sector.

44
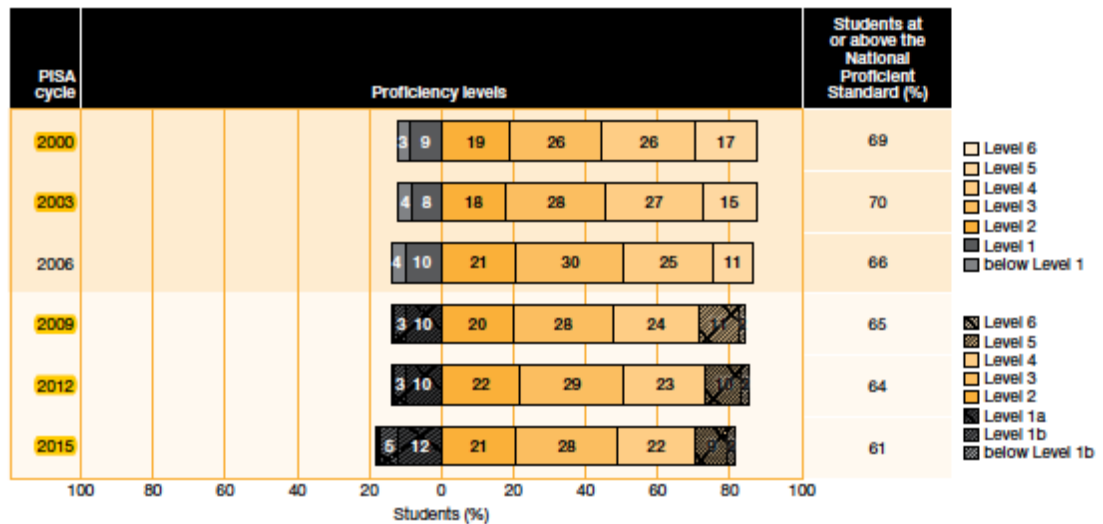
Figure 2.4 Percentage of Australian students across the reading literacy proficiency scale of PISA between 2000 and 2015. (Thomson et al., 2017, p. 115)

There is well-documented evidence that the most significant impact on student outcomes is teacher effectiveness; as stated by Hattie (2003, October, p. 4) "excellence in teaching is the single most powerful influence on [student] achievement". Therefore it is vital to develop the effective of all teachers to ensure all students achieve their potential. As the Centre for Education Statistics and Evaluation (2016) explain, "Effective professional learning can help ensure that all teachers are delivering at their highest levels and improve student outcomes in literacy and numeracy" (p. 7). Effective literacy teaching in classrooms that can address the pattern of falling performance on international testing can be achieved by providing this professional learning to pre-service and in-service teachers. While the trends in PISA literacy results are concerning and are likely reflected in the literacy levels of prospective pre-service teachers, in particular those entering their ITE course directly from school, it is further evidence of the need to progress the discussion of ITE literacy levels beyond the entry point into ITE courses. It is therefore essential to examine the professional learning that constitutes these courses to ensure prospective

45

pre-service teachers possess the necessary high literacy levels at the completion of their course. Identifying and replicating effective measures to ensure graduate teacher effectiveness is critical, to eliminate a cycle of low literacy levels in school graduates, leading to a lower level of literacy in prospective pre-service teachers and graduate teachers (Centre for Education Statistics and Evaluation, 2016).

An investigation of prospective pre-service teachers' English subject knowledge by Twisleton (2006) acknowledged the difficulty of overcoming the pre-existing beliefs held by pre-service teachers about literacy, effective literacy instruction and the role of the teacher and school. Twisleton's (2006) research identified three key approaches to literacy instruction taken by pre-service teachers, those of task manager, curriculum deliverer or concept/skill builder. She suggests the approach used by pre-service teachers is, at least in part, based on the beliefs pre-service teachers holds about education when they enter their course (Twisleton, 2006). Supporting prospective pre-service teachers to identify the beliefs about literacy teaching that they bring to their ITE course is critical in helping them identify their predisposition to one of these approaches. Interrogating and evaluating these beliefs about literacy teaching may allow prospective pre-service teachers to assess the role of their current beliefs in their future classroom. Ensuring prospective pre-service teachers are prepared for the needs of contemporary classrooms, rather than the classrooms they may have experienced in their own school experiences, is critical to enable them to address the needs of their students effectively. Contemporary classrooms, consisting of what Kalantzis et al. (2016) refer to as 'new learners' "need nothing less than 'new teachers" (p. 10). ITE courses must ensure that prospective pre-service teachers develop the skills and understandings to adopt a contemporary

approach to literacy instruction rather than allowing them to rely on the out-dated understanding of literacy teaching they bring from their own experiences in schooling. The importance of the approach taken to literacy instruction by a prospective pre-service teacher raises the question of how ITE courses establish, challenge or reinforce the beliefs of prospective pre-service teachers about literacy education that they bring from their previous literacy experiences (Twisleton, 2006). This research sought to answer this question by examining how prospective pre-service teachers' existing beliefs about literacy impacted their literacy achievement in their ITE course. Understanding the relationship between prospective pre-service teachers' existing beliefs and literacy competence is essential to ensure all graduate teachers possess the required level of literacy for the demands of the contemporary classroom. Prospective pre-service teachers who may not have been exposed to high quality literacy teaching must be supported in developing the skills necessary to help their own students achieve strong literacy skills in classrooms. It is critical therefore to investigate, and where appropriate, to challenge, the beliefs prospective pre-service teachers bring to their studies about literacy teaching and learning to ensure they become effective literacy teachers.

2.6. Contribution to Knowledge

This research is important to ensure the conversation about improving graduate teacher literacy skills moves beyond standardised testing of prospective pre-service teachers and further regulation of course admission. This research explores the factors that impact on literacy achievement in the initial stage of an ITE course and, begins to examine what can be done to support prospective pre-service teachers to ensure they develop the requisite literacy competence to achieve success in their ITE

course. The findings of this research will therefore help shape literacy instruction and support at the research institution and may also be applied to ITE courses at other institutions. The research uses both quantitative and qualitative methods to address this complex issue, and to identify factors that impact literacy competence for prospective pre-service teachers, and ultimately, their future school students.

2.7. Summary

This chapter examined the existing body of research into the factors that impact prospective pre-service teachers' literacy competence. It has identified relevant theories, such as self-efficacy (Bandura, 1977) and growth mindset (Dweck, 2010) theories, that inform the current understanding of these issues and how best to address them to ensure the development of prospective pre-service teachers' literacy competence. It has also identified the limitations of the existing research and the contribution this research study could make to further understanding these issues.

Methodology

3.1. Introduction

This chapter explains the methodology that underpinned this research study and the methods used to collect and analyse the research data. The theoretical framework that underpins the research methodology is discussed along with links to evidence to support the selection of the chosen methodology. Details of the sample and sampling criteria used and methods of data analysis in both phase one and phase two of the research are discussed. A description of how the data from each phase was integrated to fully answer the central research question is also provided.

3.2. Theoretical Framework

The philosophical stance that underpins this research study is pragmatism. This pragmatic worldview employs the research methods that work best to most fully answer the research question (Creswell, 2014). As Creswell (2014) explains, "pragmatism opens the door to multiple methods, different worldviews, and different assumptions, as well as different forms of data collection and analysis" (p. 11). The theoretical framework employed by this research is presented diagrammatically in

Figure 3.1 and further explained below.
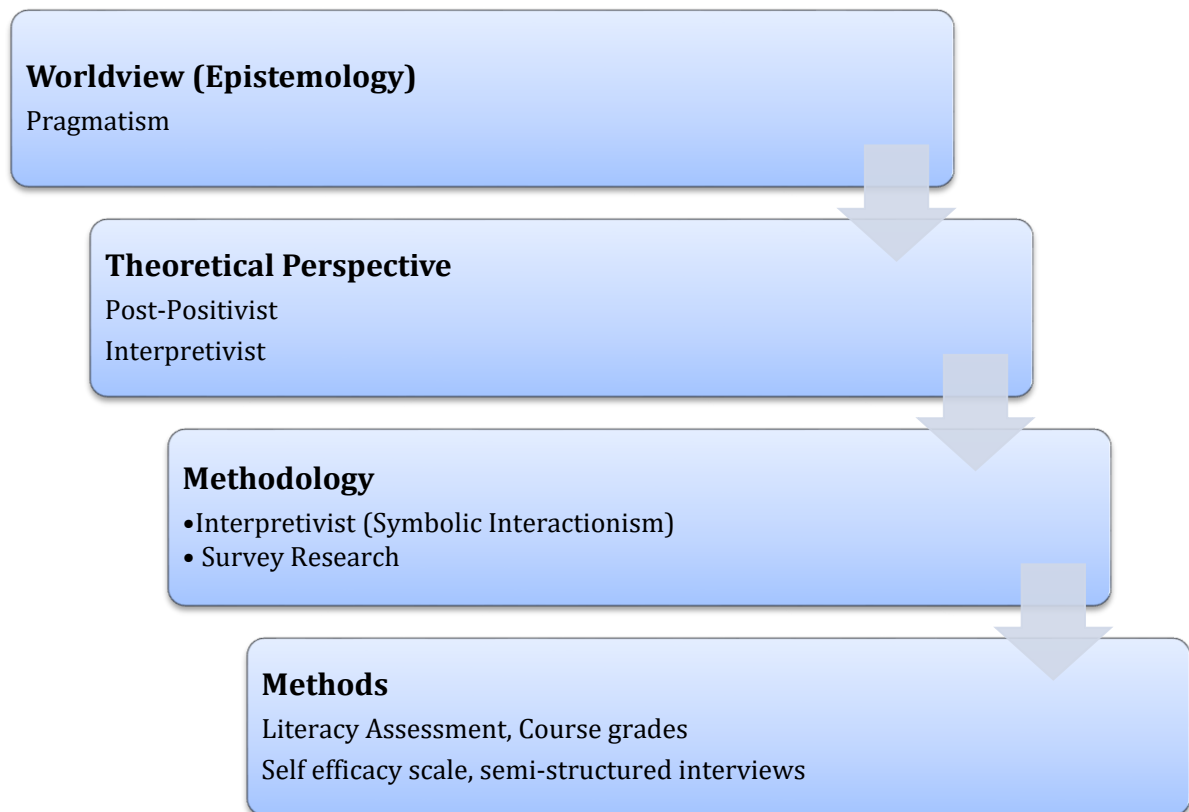
Figure 3.1 Theoretical framework employed for the research study

3.3. Worldview

A pragmatist worldview underpins the mixed methods approach used in this research study. Such an approach advocates the use of multiple ways to collect and analyse data to allow the researcher to most fully understand the problem (Creswell, 2014). This research study demonstrates a pragmatic approach as it employed both quantitative and qualitative data collection and analysis to fully answer the question of how to improve prospective teachers' literacy levels.

The use of a mixed methods design for this research study ensured multiple approaches to the collection of research data and to the analysis of this data. The two

phased approach to data collection and analysis demonstrated the pragmatic

worldview where the research draws from both qualitative and quantitative

assumptions rather than having a strong commitment to a singular system of

philosophy (Creswell, 2014). The follow up explanation model utilised in this

research study illustrates the use of multiple approaches, which is characteristic of a

pragmatist worldview.

A pragmatist theoretical perspective views the mixing of research data and

methods as both legitimate and necessary to ensure research outcomes generate

positive practical consequences for society. Described in America by Pierce, James

and Dewey in the early twentieth century, pragmatism has had many forms, however,

the common element in all of these is that meaning has reference to the situations and

conditions in which it is found (as cited inFish, 1980). Pragmatist theory focuses on

the role of society in shaping the individual and emphasises the theoretical

perspective of symbolic interactionism (Mead, 1972).

To distinguish between the mind and the body Crotty (1998, p. 43) highlighted

the relationship between an individual's assumptions, based on the situation in which

they find themselves, and the role of these assumptions in determining his or her

actions. This understanding is credited with bringing to pragmatism an emphasis on

considering a situation from the perspective of the actor, and establishing that it is the

subjective meaning the actor gives to their actions that determines meaning (Fish,

1980). Hine and Lavery (2014) explain that symbolic interactionism therefore,

requires the researcher to be vigilant to ensure that research data focuses on the

actor's intended meanings by assuming the point of view, as much as possible, of those studied.

A post-positivist theoretical perspective fits within this pragmatic approach (Creswell & Plano Clark, 2007). Post-positivists use quantitative research questions and represent the answers to these questions in numerical form (Teddlie & Tashakkori, 2009). The critical distinction between post-positivism and positivism is the acknowledgement that the researchers values and perceptions have a significant impact on the research design and findings (Teddlie & Tashakkori, 2009). This research project uses quantitative research questions and analysis in phase one, in the deductive phase of the research. The research findings from phase one will then be verified and further explained by the qualitative findings from the second, inductive, phase of the research.

3.4. Research Design

PHASE ONE
Quantitative Data Collection
PELA results, entry pathway, success in literacy uint

↓

Quantitative Results

↓

Quantitative Data Analysis

↓

Identify results for follow up in Qualitative Phase Two

↓

PHASE TWO
Qualitative Data Collection
Self efficacy and semi-structured interviews

↓

Qualitative Results

↓

Qualitative Data Analysis

↓

Interpretation of Phase One Quantitative results using Phase Two Qualitative results

Figure 3.2 Explanatory design: Follow-up explanation model utilised in the research study (Creswell & Plano Clark, 2007, p. 73)

Mixed methods research involves the collection, analysis and integration of both quantitative and qualitative data. Mixed methods research is a relatively new approach to research that experienced significant growth in popularity in the 1980s (Creswell, 2014). It has experienced significant development since this early stage

and has focussed on combining quantitative and qualitative approaches to overcome

or address the weaknesses of each of these methods when used individually

(Creswell, 2014). It is now considered a "third methodological movement"

(Tashakkori & Teddlie, 2003, p. 697). A mixed methods approach was selected for

this research study because the use of quantitative and qualitative approaches added to

the strength of the research findings and provided a more sophisticated understanding

of the complex issue of how to ensure high levels of teacher literacy (Creswell, 2014).

A mixed methods approach also ensured a more complete answer to the research

question by utilising the qualitative research findings to further explain the

quantitative research findings (Creswell, 2014).

An Explanatory Design: Follow Up Explanation model (Creswell & Plano

Clark, 2007) was utilised in this research study to utilise the available quantitative

data and complemented this with the phase two qualitative data to further explain the

quantitative findings and answer the research question within the context of the first

year literacy unit in which the research was undertaken. This design (Creswell &

Plano Clark, 2007) was also used to enable the researcher to collect and analyse

quantitative data in phase one to identify participants for phase two of the research.

Qualitative data was then collected and analysed from these purposefully selected

participants in phase two of the research study (Creswell, 2014). Finally, the data

from phase one and two was integrated and interpreted to most fully address the

central research question (Creswell & Plano-Clarke, 2007). This process is outlined in

detail in the method section. The research design is represented diagrammatically

above in Figure 3.2.

3.5.Methods/Data Collection

As the research was conducted on human participants, ethical clearance from the Human Research Ethics Committee at the research institution was necessary. After ethical clearance was granted, data for this research study was collected in two phases. In the initial quantitative phase of the research data was collected from a full cohort of prospective pre-service teachers enrolled in a compulsory literacy unit at the study institution as part of the administration of the Post Entrance Literacy Assessment (PELA). After the initial quantitative data collection and analysis, participants were purposefully selected using the results of the phase one data analysis for phase two data collection. Phase two participants were purposefully selected based on the research study criteria of demonstrating literacy competence by achieving an overall grade of a Distinction, 70% to 79%, or High Distinction, 80% or above.

3.6.Participants

3.6.1 Phase One

In the first, quantitative phase, data was collected on a full cohort (n=61) of prospective pre-service teachers enrolled in a compulsory literacy unit as part of their first year of study of a Bachelor of Education: Primary Education, Bachelor of Education: Early Childhood Education & Care course or Foundation Year: Education Stream at the research institution. Collecting data from the full cohort, rather than a sample of this population, ensured the quantitative data demonstrated external validity (Muijs, 2011) as it is reflective of the population rather than representative of it. In other words, the quantitative research findings document the experience of all

prospective pre-service teachers in the first year literacy unit in which the research was undertaken rather than documenting the experience of a sample of this group.

3.6.2 Phase Two

In phase two qualitative data collection and analysis was undertaken with a small sample of prospective pre-service teachers (n=6) from those who were identified as demonstrating literacy competence in the phase one quantitative research (i.e. achieved a numerical grade of 70 or above in the literacy unit). This sample of six prospective pre-service teachers represents 40% of the prospective pre-service teachers that met the literacy competence criteria of achieving a score of 70 or over from the literacy unit and 60% of the prospective pre-service teachers that met the literacy competence criteria and indicated their willingness to participate in phase two of the research on the phase one consent form. The selection of these participants demonstrates purposeful sampling, which is described by Creswell and Plano Clark (2007) as the intentional selection of participants who have experience with the central phenomena. These prospective pre-service teachers were selected from the larger cohort that participated in phase one as they had experienced the central research phenomena of demonstrating literacy competence, as indicated by their overall unit grade.

The researcher was mindful to also ensure the research sample for phase two data collection demonstrated maximal variation sampling (Creswell & Plano-Clark, 2007). This was achieved by ensuring participants were likely to have different perspectives and represented prospective pre-service teachers from across the categories of entry pathway and PELA results. Three of the six phase two participants

entered their course with an ATAR or equivalent qualification, while the remaining three participants entered their course via an alternative pathway. Three of the phase two participants were also identified in at least one area of the PELA as requiring support with literacy. The use of maximal variation sampling, as demonstrated in phase two of this research study, ensured that the research study participants represented a range or variety of the possible variables. In this case, the participants represented a range of PELA outcomes and entry pathways to ensure the phase two results were representative of the broad range of prospective pre-service teachers enrolled in the literacy unit and more broadly in initial teacher education (ITE) courses.

3.7. Data Collection

3.7.1 Phase One

Quantitative data to answer specific research questions one and two was collected as part of the administration of the Post Entrance Literacy Assessment (PELA) to all first year pre-service teachers. All prospective pre-service teachers at the research institution who are enrolled in a first-year literacy unit were required to complete the Post Entrance Literacy Assessment (PELA) in their first literacy class for the semester. Those prospective pre-service teachers that did not attend a week one tutorial were emailed to explain that the PELA must be completed as part of their enrolment in the first year literacy unit and asked to organise a time to complete it prior to their next class. This email contact was repeated until all but one prospective pre-service teacher who continued their enrolment in the unit completed the PELA (this prospective pre-service teacher had completed the PELA in a previous semester).

Prospective pre-service teachers were provided with a brief explanation of the purpose of the PELA and the grading and follow up process (including that the PELA would not count towards their unit grade and would not be marked by staff teaching the unit) when the PELA papers were distributed. They were provided with time to complete the student audit details and then given an hour in class to complete the three sections of the PELA; spelling, reading and writing. The PELA papers were then sent to the Academic Enabling and Support Centre to be marked and in week five of the semester prospective pre-service teachers and the researcher were notified of the PELA results for all papers completed in week one (those prospective pre-service teachers that completed the PELA after the week one tutorials were notified later, the date of notification was dependent on the date they completed the PELA).

The PELA papers were then made available to the researcher and the quantitative data was extracted and entered into an Excel spread sheet. The information provided in the student audit details was used to generate nominal or 'count' categories of discrete data (Mujis, 2011). For example, the various entry pathways into the course of study using the categories of ATAR, mature age entrant, VET qualified entrant, enabling program entrant, and other, were each allocated a numerical code (1, 2, 3, 4) and the prospective pre-service teachers' PELA scores as a mark out of 40 was recorded separately. PELA scores are reported to prospective pre-service teachers as a mark out of 20 for spelling and a mark out of 10 for both reading and writing. While constructing the Excel spread sheet, the researcher chose to record PELA results in this way, as well as an overall mark out of 40, to allow for investigation of each individual measure as a variable.

3.7.2 Phase Two

In total, 15 prospective pre-service teachers met the research study criteria of literacy competence by achieving an overall grade of a Distinction, 70% to 79%, or High Distinction, 80% or above. Ten of these prospective pre-service teachers had indicated on the phase one consent form that they were willing to be contacted to participate in an interview in phase two of the research study. All ten prospective pre-service teachers were emailed after completion of the course to invite them to participate in an interview to collect the phase two, qualitative data. A follow up email, SMS and telephone calls resulted in six prospective pre-service teachers agreeing to be interviewed after the end of the unit.

Prospective pre-service teachers attended a one to one interview on the University campus. They were provided with a copy of the phase two participant information sheet (attached as appendix 3), the phase two consent form to sign and leave with the researcher (attached as appendix 5), the semi-structured interview questions (attached as appendix 8) and the phase two interview self reflection questions (attached as appendix 7). All prospective pre-service teachers agreed to the interviews being recorded electronically to be transcribed post interview. Once all interviews were completed the recorded interviews were sent to a transcription service and copies of each transcript were sent to the individual prospective pre-service teacher to be checked that it accurately reflected the prospective pre-service teacher's words and intended meaning.

As well as the data contained in the interview transcripts, the researcher also generated data from field notes taken during the semi-structured interview and pre-

and post- interview reflections entered into a research journal as well as the prospective pre-service teachers' self reflections completed at the time of the interviews. These observation and interview protocols allowed the researcher to document the process of qualitative data collection in multiple ways, ensuring the data collected was purposeful and informative in addressing the central research question (Creswell, 2014). In summary, data collection in phase two consisted of transcriptions of interviews, prospective pre-service teacher's responses to the self reflection questions, the researcher's handwritten interview notes and the researcher's pre- and post-interview reflections in the research journal.

3.8.Data Analysis

3.8.1 Phase One

Quantitative data in phase one of the research was entered into an Excel spread sheet and then imported into SPSS for analysis after end of semester grades were finalised and submitted to the Dean of the School of Education. As there are multiple independent variables to be investigated, both a multiple correlation and regression analysis were needed to study the relationship between the multiple independent variables affecting the dependent variable of literacy competence in the phase one data (Punch, 2009).

SPSS data analysis was done to determine the reliability of PELA scales. Cronbach 's values and an inter-item correlation matrix were used to establish the internal consistency and reliability of the scale with the study sample and to indicate scale reliability and measure the degree to which the items on the scale were measuring the same characteristics or elements (Pallant, 2016). Initially, a correlation

analysis was conducted to establish the existence of a relationship between PELA scores and literacy achievement (Pallant, 2016).

Following this an independent samples t-test was conducted to establish the relationship between entry pathway and literacy achievement and a two-way between groups ANOVA was used to examine the relationship between PELA scores and entry pathways on literacy achievement. These parametric analyses share a set of assumptions that Pallant (2016) explain must be checked to ensure the results of the analyses are accurate. The first key assumption addressed to ensure accuracy was checking for the normal distribution of the dependent variable of literacy score.

Next a Levene's test of equality of variances was performed to ensure the model did not violate the refined homogeneity of variances assumption (Pallant, 2016). The results of these analyses are discussed in detail in the following chapter. Finally, a multiple regression analysis was completed to investigate how much of the variance in literacy scores can be explained by the independent variables of PELA Spelling, PELA Reading, PELA Writing and PELA total scores. The output of this data analysis was then evaluated to ensure the results of this analysis were accurate.

3.8.2 Phase Two

The qualitative data collected from the self-efficacy questions and semi-structured interviews in phase two of the research was analysed after it was transcribed from the recorded interview and annotated with observational notes taken by the interviewer. Analysis of the interview data was begun as soon as the data was transcribed using open coding to identify themes within the data. The use of open

61

coding, a term borrowed from grounded theory, allowed the codes that were

generated to be grounded in the perspectives of the participants (Creswell, 2014),

ensuring the emphasis of the data analysis was on the intended meanings and point of

view of the participant rather than that of the researcher. Codes were recorded in the

left hand margin of interview transcripts and memos added to the right hand margin

by the researcher to further support the analysis of the data. The process of open

coding enabled the researcher to interrogate the interview data line by line and

identify the themes presented (Merriam, 2009). A continuous iterative process was

used for subsequent interview data as it was collected and transcribed to continue this

process of open coding and ensuring a consistent focus on examining the intended

meanings and point of view of the participant rather than that of the researcher

(Crotty, 1998). The qualitative data analysis process is shown diagrammatically

below in Figure 3.3.

```
┌─────────────────┐
│   1. Conduct    │
│    interview    │
└─────────────────┘
        ↕   ↓
┌─────────────────┐
│  2. Transcribe  │
│    interview    │
└─────────────────┘
         ↓
┌─────────────────┐
│    3. Review    │
│    interview    │
│  transcription  │
└─────────────────┘
      ↙        ↘
┌──────────────┐     ┌──────────────────┐
│ 5. Data      │ ↔  │  4. Combine with │
│  reduction   │     │ other qualitative│
│              │     │   data sources   │
└──────────────┘     └──────────────────┘
```
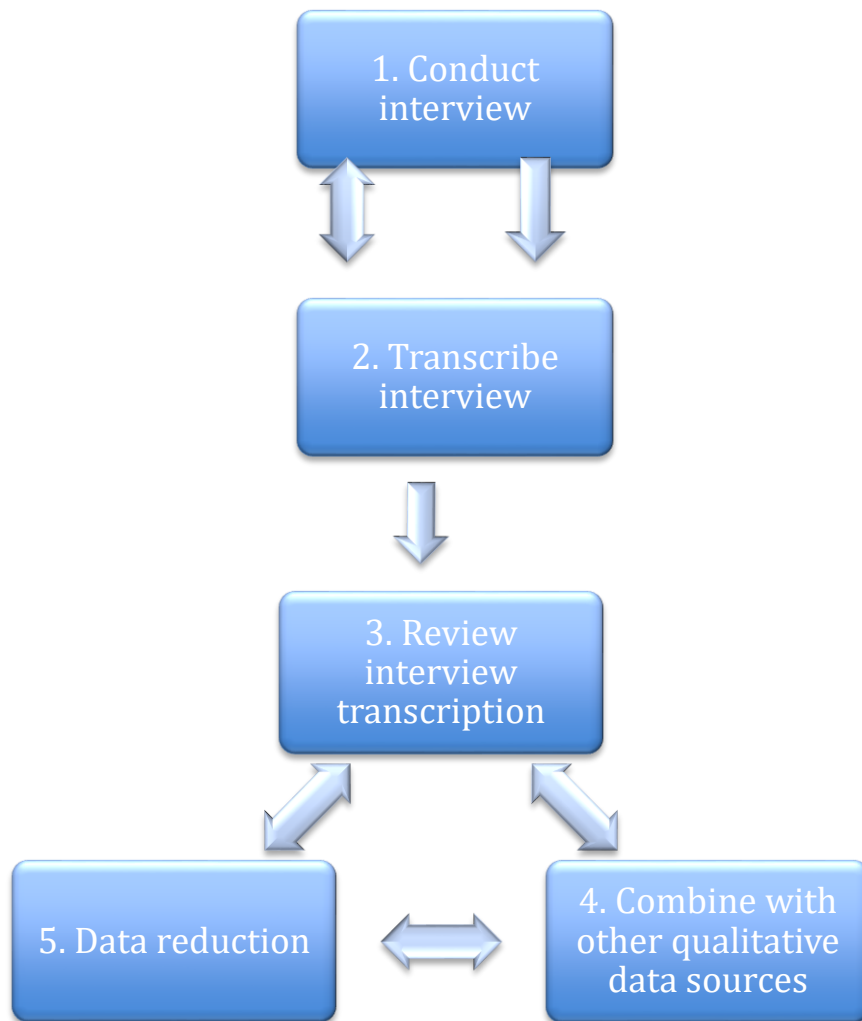
Figure 3.3 Overview of the iterative process used during qualitative data analysis

The additional forms of data collected in phase two, including the prospective

pre-service teachers' responses to the self reflection questions, the researcher's

handwritten notes and the pre- and post-interview reflections in the research journal

were also examined for evidence to support the process of open coding. Viewing all

the data collected simultaneously supported the triangulation of the data, increasing

the validity of the themes that were identified in the open coding of the interview

transcripts. This approach allowed the researcher to narrow in on the most critical and pertinent information revealed from the multiple data streams. Creswell (2014) explains that this whittling down of the data is a critical feature of qualitative data analysis compared with the focus on the complete data set found in quantitative data analysis. An additional strategy utilised to triangulate the qualitative data included the use of a research journal to document researcher reflections during both the interview/data collection stage and the data analysis stage of the qualitative phase of the research study allowing the researcher to identify and interrogate any personal bias revealed during these processes (Creswell, 2014). The sources of the phase two qualitative data are summarised diagrammatically below in Figure 3.4.
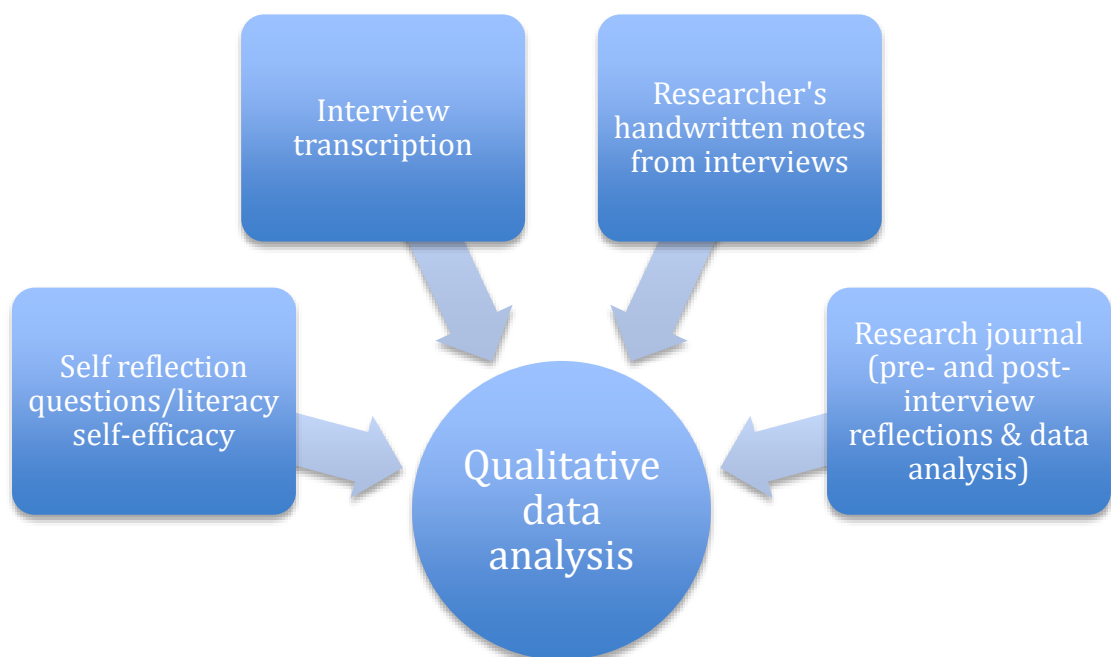
*Figure 3.4* Sources of data for the phase two qualitative data analysis

The iterative process used during data analysis also contributed to the reliability of the research data and the findings drawn from this data as the continual revision of the data and the codes assigned to it ensured the consistency of the codes and their use during the coding process. The use of the research journal to document

the steps taken during the coding process also contributed to the reliability of the research findings by making the codes and coding process used more explicit and therefore more easily replicated (Creswell, 2014). Revisiting the codes used throughout the coding process was especially important given the more drawn out timeframe for the interviews than was initially intended.

At integral points in the interview data analysis process, the phase one quantitative analysis was revisited, to ensure the qualitative data analysis focused on the most statistically significant and non-significant outcomes from phase one as starting points for the open coding process (Creswell & Plano Clark, 2007). By focusing on both significant and insignificant outcomes of the phase one data analysis, the phase two analysis most effectively explained the phase one data and allowed for comparison of different groups of prospective pre-service teachers and their literacy outcomes. For example the phase two data analysis looked not only for the relationship between prospective pre-service teachers' literacy self-efficacy and previous experiences with their literacy competence but it also sought to examine the relationships that were or were not established between prospective pre-service teachers' PELA scores and entry pathway and their literacy competence. Using the outcomes of the open coding process, inferences or theories about the relationship between the themes and sub-themes identified from the data were used to establish the relationship between prospective pre-service teachers' literacy self-efficacy and previous literacy experiences and their literacy competence. The inferences from the qualitative analysis are presented and discussed in chapter four, and the implications of these inferences are addressed in chapter five.

3.9. Interpretation

Once the phase two qualitative data was collected and analysed, these results were compared and contrasted with the results from the phase one quantitative data analysis (Creswell, 2014). This process involved examining the data collected within each phase of the research study for similarities and discrepancies. The findings from phase two of the research study were used to review the results from the phase one data analysis to identify how these quantitative results from the full cohort could be further explained using the qualitative results from the sample of students who had demonstrated literacy achievement within the first year literacy unit.

3.10. Summary

This chapter detailed the quantitative and qualitative research methods used in this mixed methods research study and the pragmatist worldview that underpinned the theoretical framework utilised by the research. The mixed methods Explanatory design: Follow-up explanation model utilised in the research study (Creswell & Plano Clark, 2007) was explained to demonstrate the relationship between phase one, when specific research questions one and two were explored, and phase two when specific research questions three and four were explored. The chapter goes on to describe how the research findings from phase one and two data collection and analysis were combined to address the central research question. The findings related to both the specific and central research questions from these analyses are discussed in detail in chapter four.

Chapter Four

Results

4.1.Introduction

This chapter presents the findings of the research study. It is organised into the two phases of the research study, with the details and findings of the initial quantitative phase presented first. The quantitative phase of the research investigated research sub-questions one and two; "What is the relationship between a prospective pre-service teacher's entry pathway and his/her achievement in a first year literacy unit?" and, "what is the relationship between a prospective pre-service teacher's Post Entrance Literacy Assessment (PELA) results and his/her achievement in a first year literacy unit?" The details and findings of the subsequent qualitative phase are then presented. The qualitative phase of the research investigated research sub-questions three and four; "What is the relationship between a prospective pre-service teacher's perceptions of self-efficacy with literacy and his/her achievement in a first year literacy unit?" and "what is the relationship between a prospective pre-service teacher's previous experiences with literacy and his/her achievement in a first year literacy unit?" The findings of both the quantitative and qualitative phases are then combined to address the overarching research question: "What factors impact prospective pre-service teacher achievement in a first year literacy unit?"

4.2.Phase One

4.2.1 Demographic Information

A full cohort of prospective pre-service teachers enrolled in the first year literacy unit of the Bachelor of Education Primary and Early Childhood and Care 0-8,

67

at the research institution took part in phase one of the research study. Demographic

information regarding the prospective pre-service teacher participants was collected

as part of the Post Entrance Literacy Assessment (PELA) administered in week one of

the semester. This demographic information included prospective pre-service

teachers' gender, entry pathway, ATAR scores and final year of high school units (if

applicable), home languages and whether they were the first member of their family

to attend university. This cohort consisted of 61 prospective pre-service teachers, with

the majority, 84%, of these prospective pre-service teachers being female and only ten

prospective pre-service teachers, or 16%, being male.
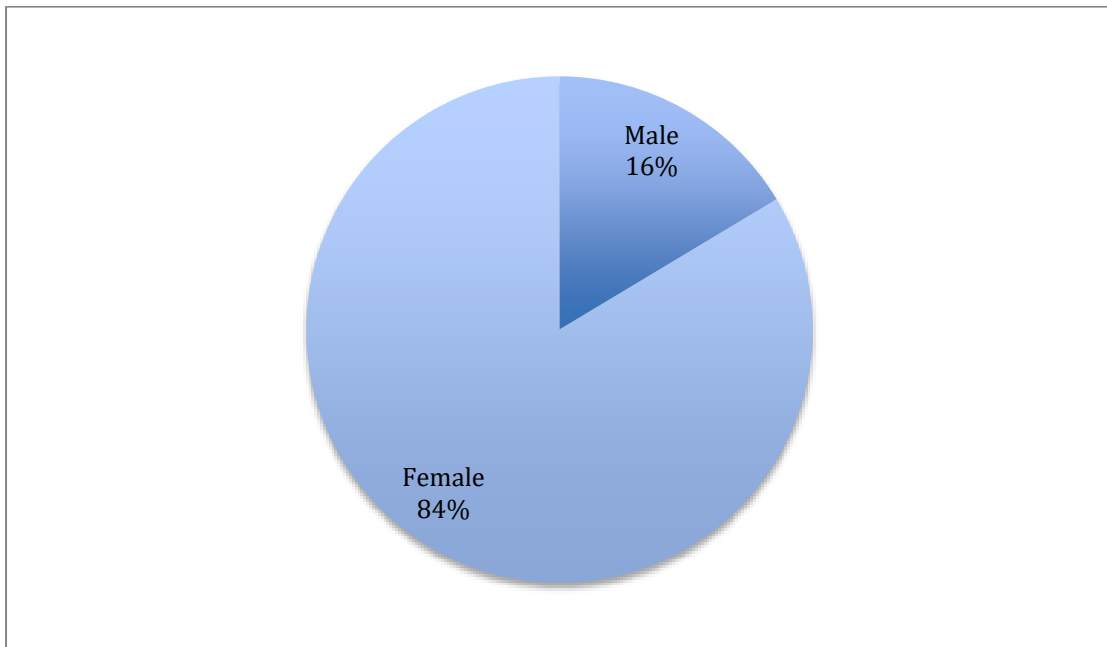
Figure 4.1 Phase One – Gender of Participants

The majority of prospective pre-service teachers (64%) reported their entry

pathway as via a tertiary enabling program, or Foundation Year as it is referred to at

the research institution. The second most common entry pathway, at 20%, was

reported as via an ATAR score. A further 11% of participants reported their entry

pathway as via a VET qualification, and 2% reported other entry pathways (one

prospective pre-service teacher had transferred from another Bachelor degree course and the second did not specify). Only one prospective pre-service teacher reported their entry pathway as via mature aged entry. This demographic information regarding entry pathway is shown diagrammatically below in figure 4.2. This range of entry pathways is representative of other second semester cohorts in the first year literacy unit. In both first and second semesters the majority of prospective pre-service teachers enter the unit via a tertiary enabling program or an ATAR score (however these may be interchanged as first and second most common entry pathways in some cohorts). This range of pathways is also representative of the entry pathway of prospective pre-service teachers across institutions (Australian Institute for Teaching and School Leadership, 2017).
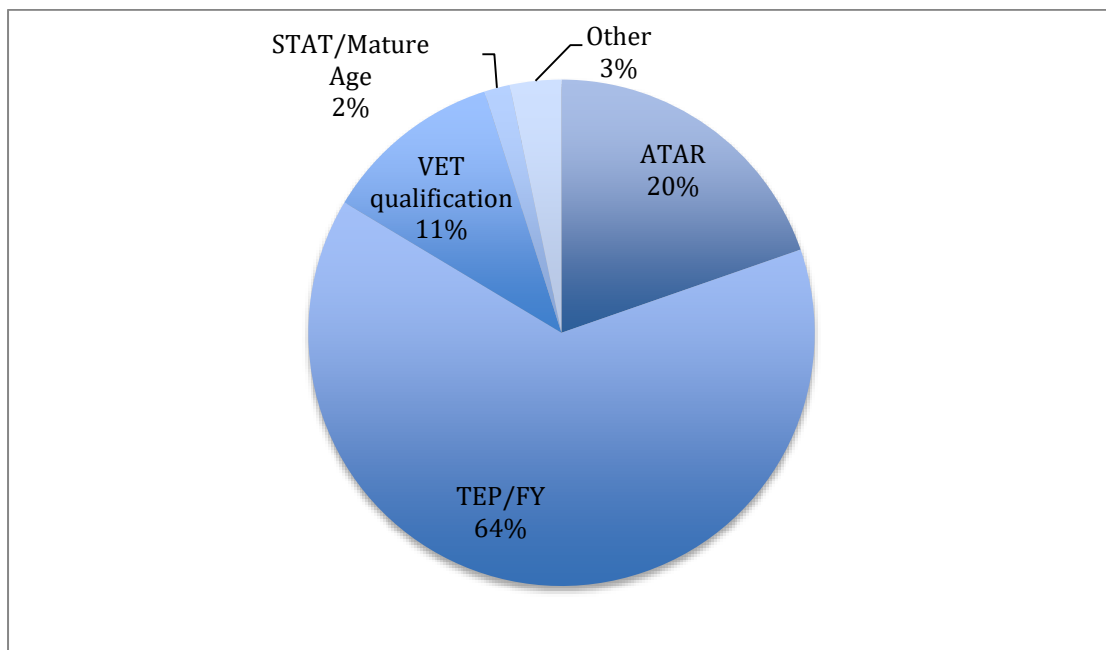
Figure 4.2 Phase One – Entry Pathway of Participants

All prospective pre-service teachers reported English as a home language with nine prospective pre-service teachers also listing a second language. Two prospective pre-service teachers listed Croatian as a home language as well as English and the remaining seven prospective pre-service teachers listed Portuguese, Japanese,

Africaans, Italian, German, Malay and Tagalog. The cohort was close to evenly

divided as to whether or not they were the first in their family to attend university.

This demographic information is shown diagrammatically below in table 4.1 and

figure 4.3.

Home Language	Number of Participants	Percentage
English	61	100% *
Croatian	2	3%
Portuguese	1	1.6%
Japanese	1	1.6%
Afrikaans	1	1.6%
Italian	1	1.6%
German	1	1.6%
Malay	1	1.6%
Tagalog	1	1.6%

Table 4.1 *Phase One – Home Languages of Participants*
* All participants spoke English. Some participants also listed an additional home language
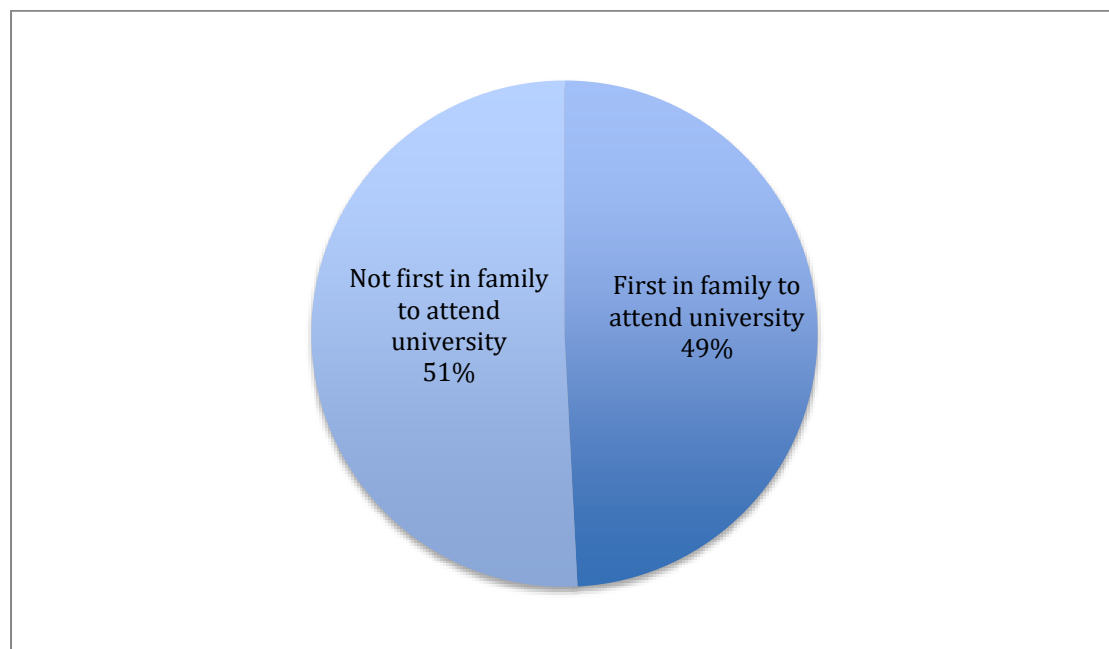
Figure 4.3 Phase One – First Member of Family to Attend University

4.2.2 Overview of PELA Results

Of the 61 prospective pre-service teachers who completed the PELA nine, or

14.8% of the cohort, did not meet the 50% benchmark for spelling, 15, or 24.6% of

the cohort did not achieve the 50% benchmark for the reading and 11, or 18% of the

cohort, did not achieve the 50% writing benchmark. Only two prospective pre-service

teachers were below the benchmark in all three sections of the PELA, while an

additional four prospective pre-service teachers failed to meet the benchmark in two

sections. These prospective pre-service teachers who failed to meet two or more

benchmarks on the PELA represent 9.8% of the cohort. These PELA results are

presented in table 4.2 below.

PELA section	Number of prospective pre-service teachers below benchmark	Percentage of cohort below benchmark
Spelling	9	14.8%
Reading	15	24.6%
Writing	11	18%
[ALL 3 sections	2	3.3%]*
[2 sections	4	6.6%]*

Table 4.2 *Phase One – PELA Results: Prospective pre-service teachers below
benchmark*
**These prospective pre-service teachers are represented in the figures above for
Spelling, Reading and Writing also*

Total PELA scores ranged from 19 out of forty to 35 out of forty, with a

median of 28. PELA Spelling scores ranged from five out of 20 to 18 out of 20. The

median PELA spelling score was 13. PELA reading scores ranged from five out of ten

to ten out of ten, with a median of eight. PELA writing scores ranged from four out of

ten to nine out of ten, with a median of seven. The distribution of PELA results, both

overall and for each section of the PELA, is shown graphically below in figures 4.4,
4.5, 4.6 and 4.7.
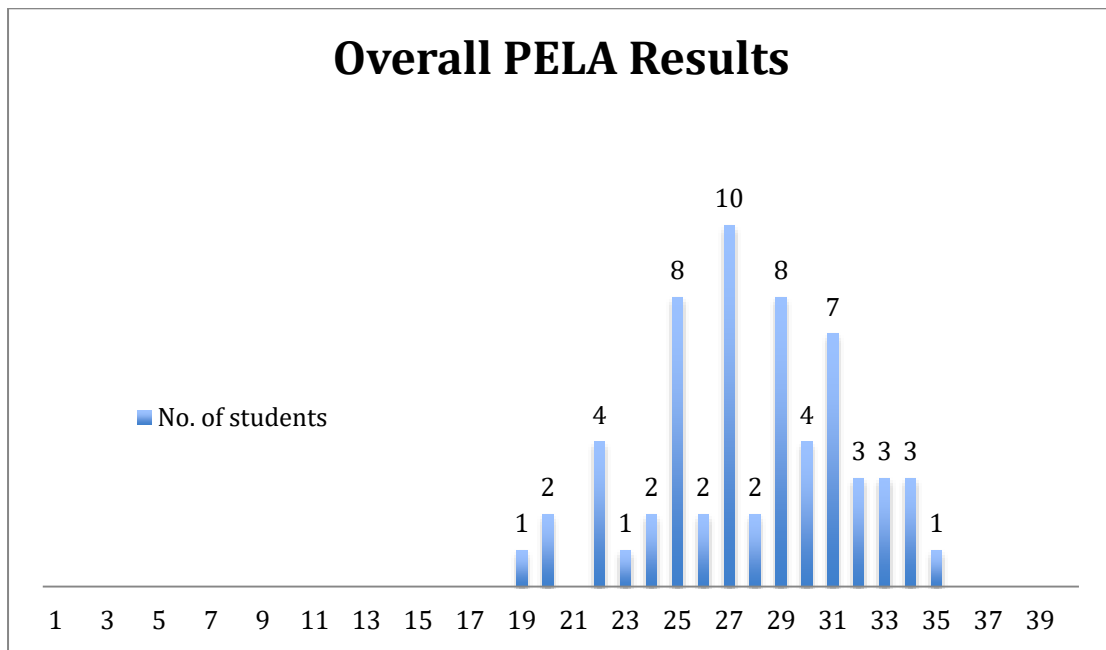
Figure 4.4 Phase One – Distribution of Total PELA Scores
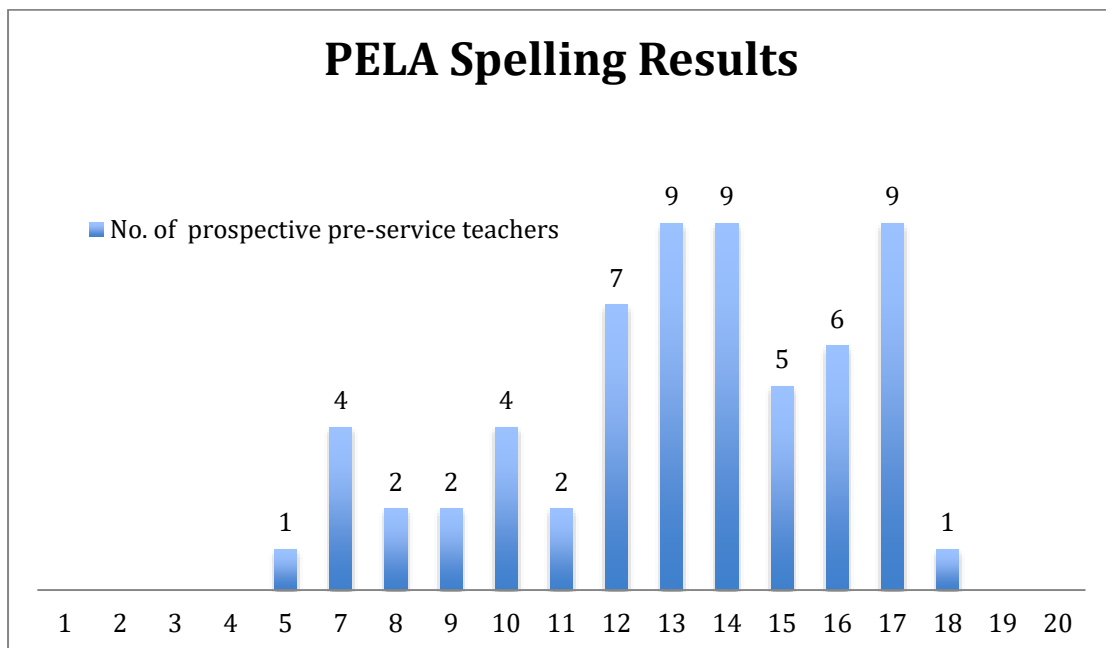
Figure 4.5 Phase One - Distribution of PELA Spelling Scores

PELA Reading Results
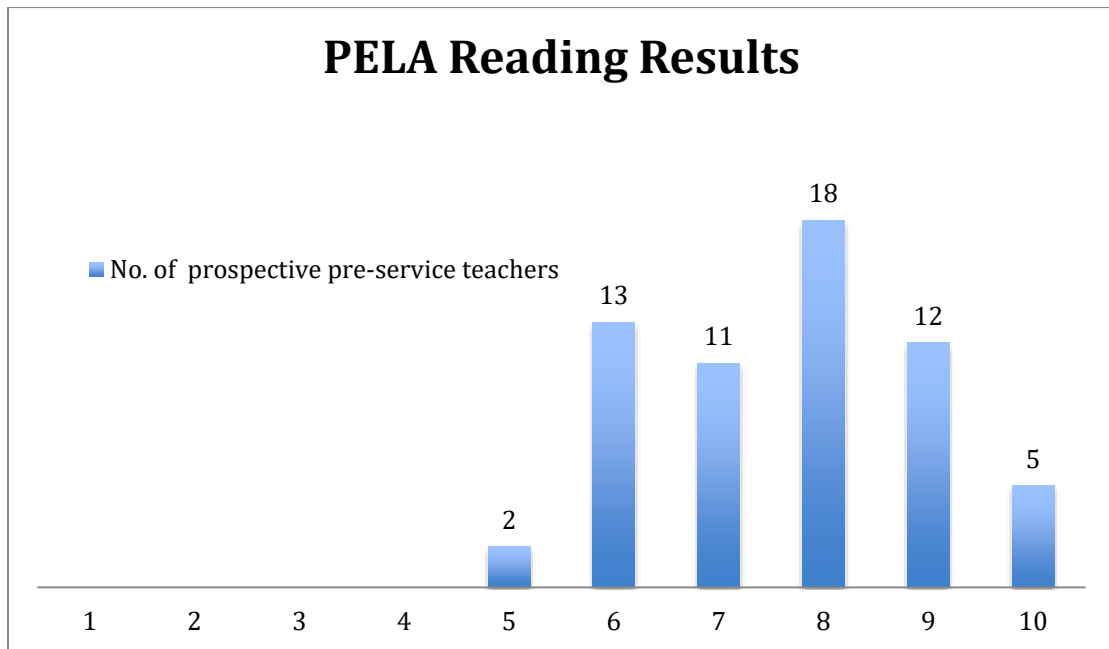
Figure 4.6 Phase One- Distribution of PELA Reading Scores

PELA Writing Results
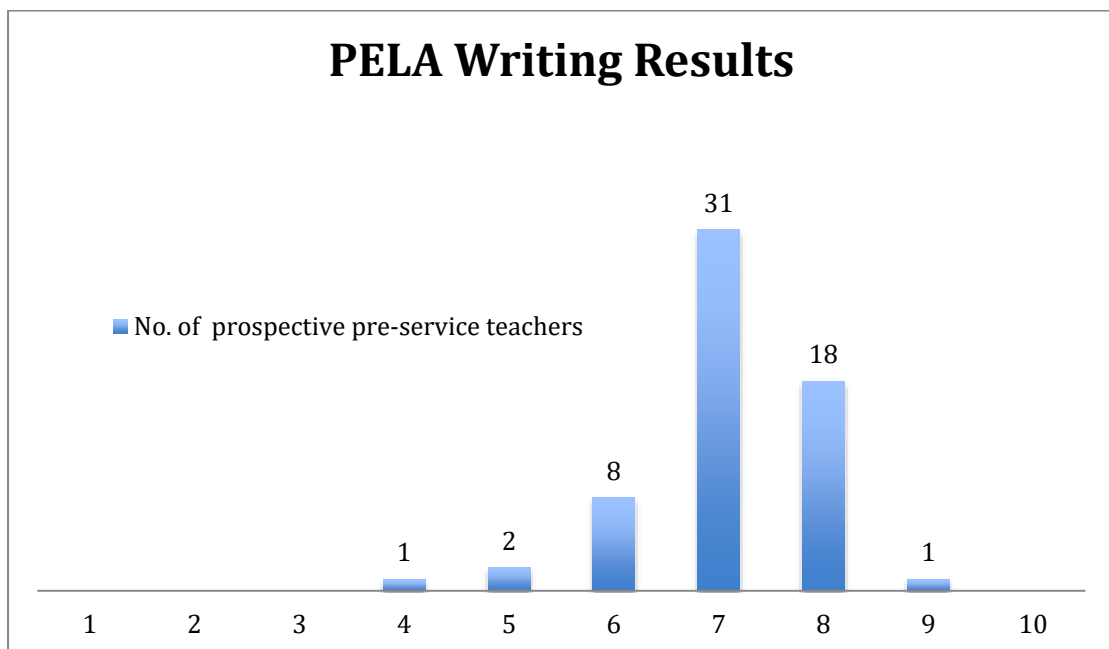
Figure 4.7 Phase One – Distribution of PELA Writing Scores

4.2.3   Results related to Entry Pathway

Preliminary analyses of the SPSS data were performed to explore the relationship between literacy achievement within the first year literacy unit and the demographic data collected during the administration of the PELA. This analysis revealed that the highest mean literacy scores for the unit were recorded for

prospective pre-service teachers entering their ITE course via an ATAR score and the

prospective pre-service teachers who indicated they entered their course via "other"

pathways. The categories of mature aged entrant (indicated in the graph below by

'STAT') and "other" (indicated in the graph by the symbol '?') contain only one and

two prospective pre-service teachers each making further statistically analysis of these

groups unreliable. The lowest mean literacy scores were observed in female

Foundation Year prospective pre-service teachers. These results are shown in figure

4.8 below.
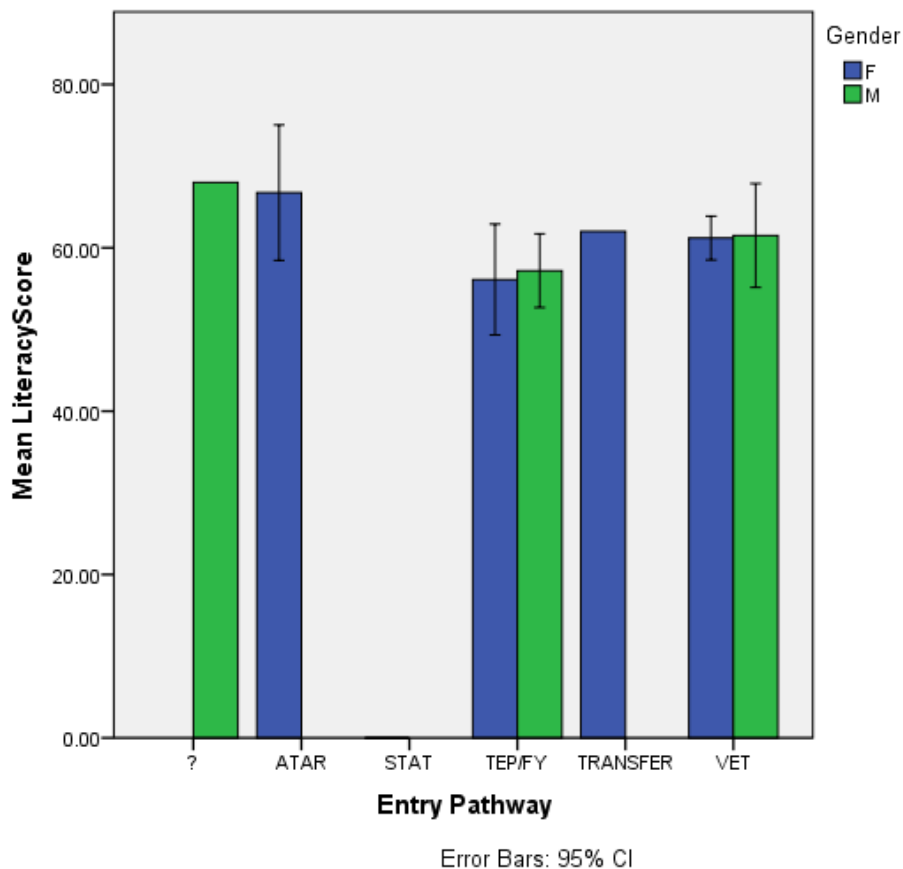
Figure 4.8 Mean literacy scores by entry pathway and gender

The preliminary analysis also showed that literacy scores were observably

higher for prospective pre-service teachers with an ATAR who are the first in their

family to attend university than those prospective pre-service teachers entering via

other pathways, and slightly above those of prospective pre-service teachers who entered their ITE with an ATAR who were not the first in their family to attend university. Literacy scores were lowest for prospective pre-service teachers who entered their ITE course via the Foundation Year program and are the first in their family to attend university. These results are shown diagrammatically in figure 4.9 below.
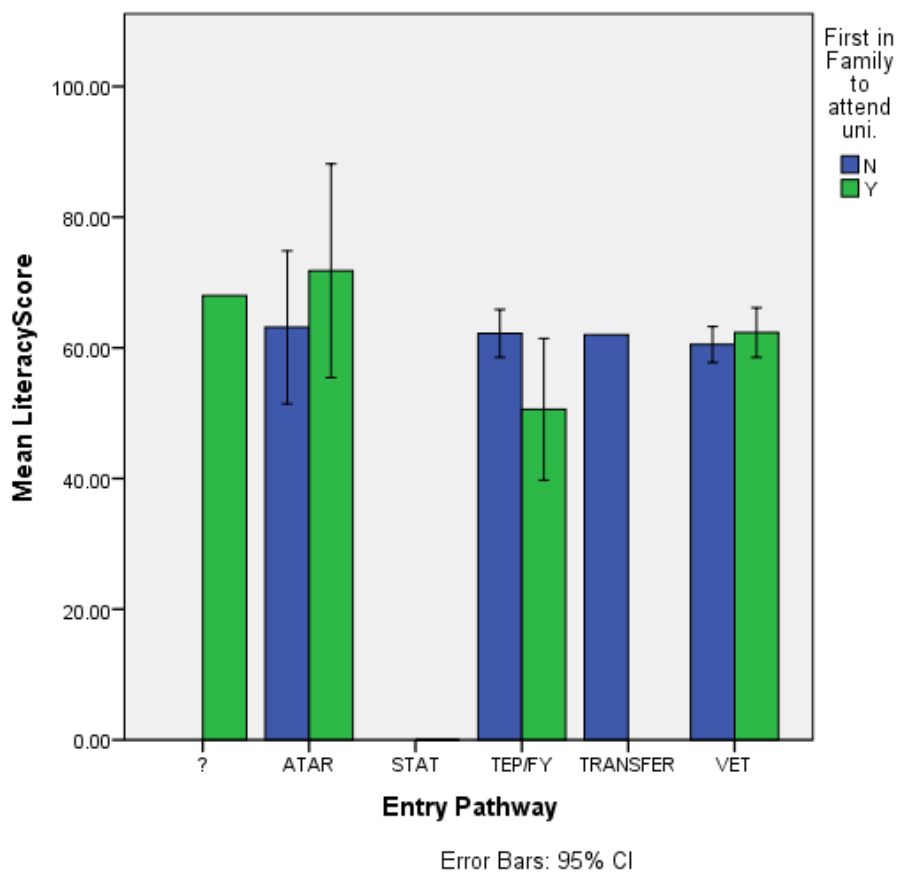
Figure 4.9 Mean literacy scores by entry pathway and status as first in family to attend university

Data from the preliminary analyses further demonstrated that mean literacy scores for the study cohort were similar for prospective pre-service teachers who indicated a home language of English only and prospective pre-service teachers who indicated a second home language. This data indicates there is no significant

advantage or disadvantage related to literacy achievement for prospective pre-service

teachers with a home language other than English in this cohort. These results are

shown below in figure 4.10.
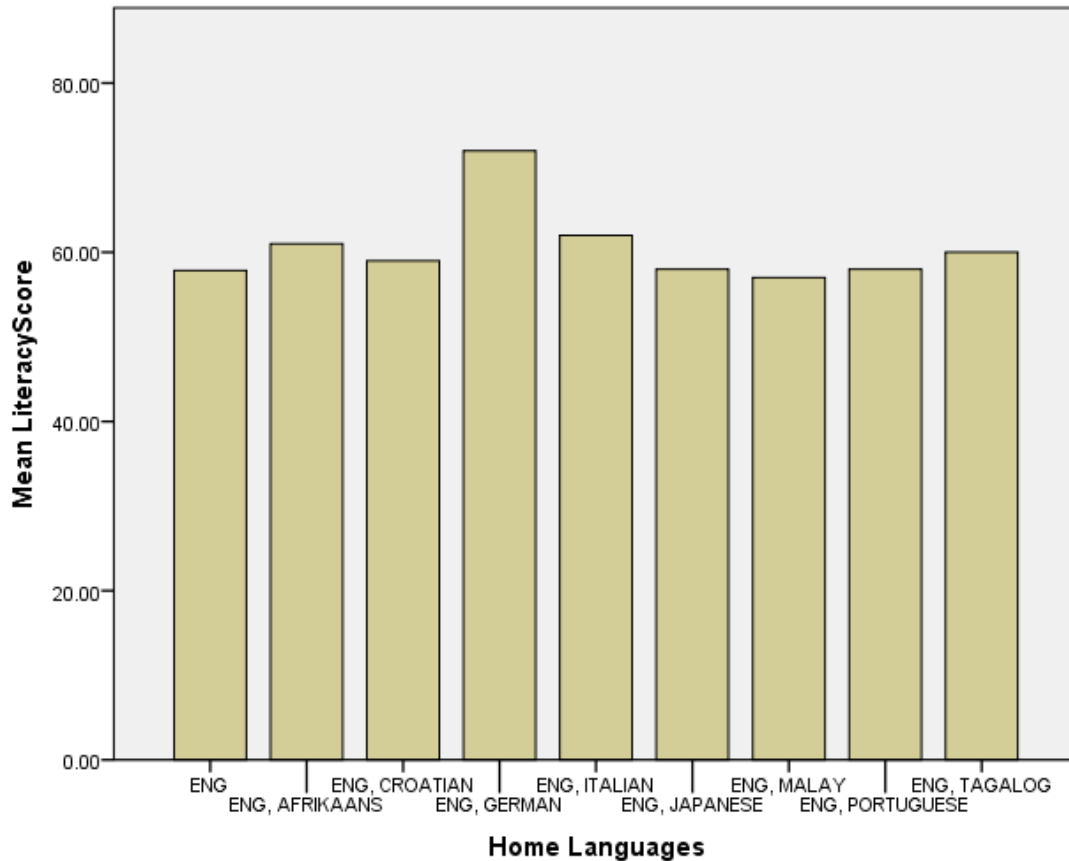
Figure 4.10 Mean literacy score by home language/s

An independent sample T-test was conducted to compare the literacy scores of

prospective pre-service teachers from ATAR and non-ATAR entry pathways. This

test revealed a significant difference between the ATAR ($M = 66.75$, $SD = 13.05$) and

non-ATAR entry pathway groups ($M = 56.18$, $SD = 18.30$; t (59) $= 0.868$, $p = 0.065$,

two-tailed) in literacy achievement within the unit. The magnitude of the differences

in the mean (mean difference = 10.57, 95% CI: -0.67 to 21.81) was close to moderate

(eta squared = 0.05657) (Pallant, 2016). The results of this analysis indicate that

whether a prospective pre-service teacher entered their ITE course via an ATAR or

non-ATAR entry pathway had a moderate effect on their literacy achievement in the first year literacy unit (Cohen, 1998, as cited in Pallant, 2016).

A two-way between-groups analysis of variance was then conducted to explore the impact of entry pathway and overall PELA score on literacy achievement in the first year literacy unit. Overall PELA scores where converted to alphabetic grades, from an F (Fail) for scores below 50%, P (Pass) for scores between 50% and 59%, C (Credit) for scores between 60% and 69%, D (Distinction) for scores between 70% and 79% and a HD (High Distinction) for scores above 80% . The category FN [Fail Non-complete] was also used for prospective pre-service teachers who did not complete all assessment items. The interaction effect between entry pathway and PELA grade was not statistically significant, (F (2.286) = 0.694, $p = 0.691$) indicating there is no significant difference between the effect of entry pathway on PELA grades. There was a statistically significant main effect for entry pathway (F (2.286) =3.711, $p = 0.007$) but no significant main effect for PELA grade (F (2.286) = 0.533, $p = 0.712$). These results indicate that entry pathways were a reliable predictor of literacy achievement however, PELA grades were not a reliable predictor of literacy achievement. The effect size for entry pathway is considered large (partial eta squared = 0.292) as 29.2% of the variance in literacy score is explained by a prospective pre-service teacher's entry pathway. Further analysis showed an 11% difference in total mean literacy scores for the different entry pathways (Cohen's d = >0.8) (Pallant, 2016). Post-hoc comparisons using the Tukey HSD test indicated no significant differences between the different PELA grade groups in their literacy scores.

4.2.4   Results related to PELA Results

Preliminary analyses were performed to explore the relationship between literacy achievement within the first year literacy unit and the prospective pre-service teachers' results on the PELA using total PELA scores. This analysis revealed the mean total PELA scores were highest for three groups of prospective pre-service teachers. These groups are prospective pre-service teachers from the ATAR and mature aged entry pathways and those who entered their ITE course via a VET qualification who were not the first in their family to attend university. Mean total PELA scores were also observed to be higher for females in all categories than for male prospective pre-service teachers. There results are shown below in figure 4.11 and 4.12.
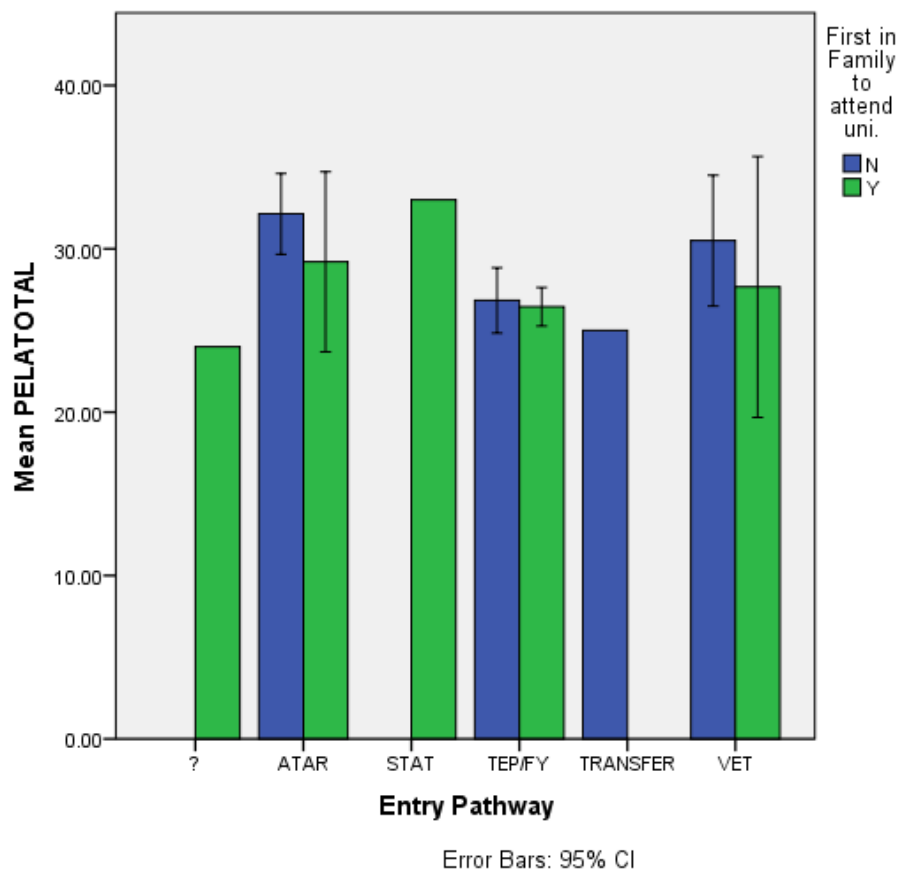
Figure 4.11 Mean PELA total by entry pathway and status as first in family to attend

university

Error Bars: 95% CI
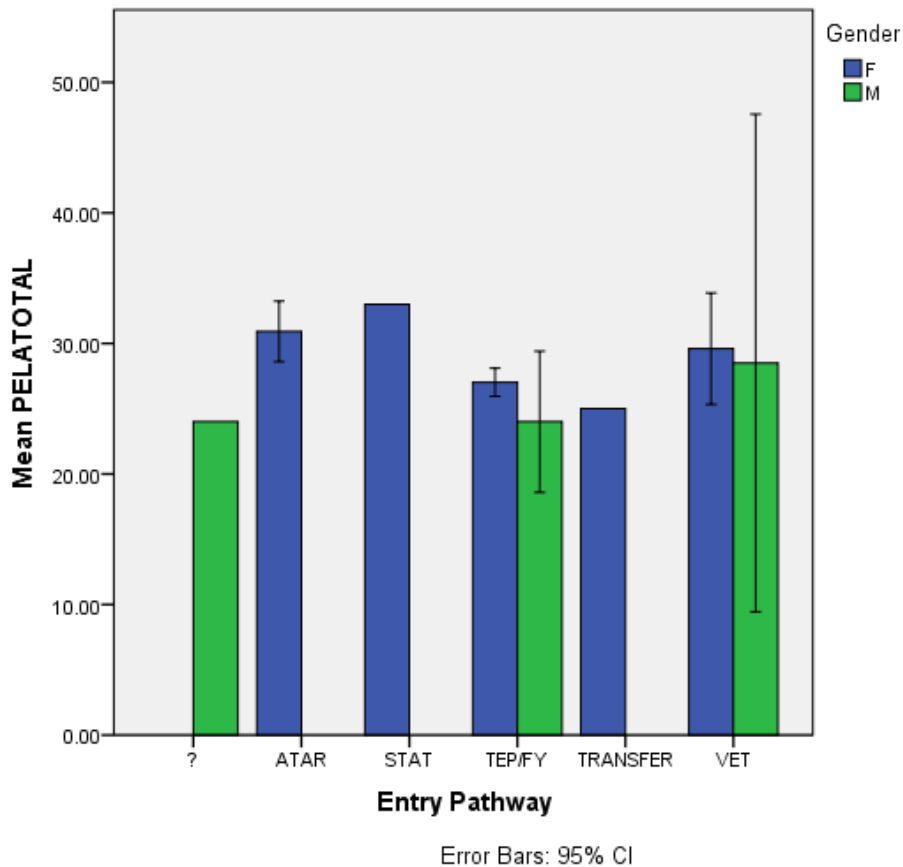
Figure 4.12 Mean PELA total by entry pathway and gender

The preliminary analysis also found a variation in total PELA score of more

than 10 points out of the possible 40 points, between the highest and lowest scores for

prospective pre-service teachers who reported a second home language as well as

English. This analysis reveals that some prospective pre-service teachers with an

additional home language received a high total PELA score while others with a

second home language received low total PELA. The prospective pre-service teachers

who reported speaking German, Malay and Portuguese as well as English at home

reported total PELA scores well above 30 out of 40, while the prospective pre-service

teacher who speaks Africaans and English at home only scored 20 out of 40. As the

data on home languages represents individual prospective pre-service teachers it may
be that variations in the data represent the general differences between prospective
pre-service teachers that are unrelated to their second language. This variation is
shown below in figure 4.13.
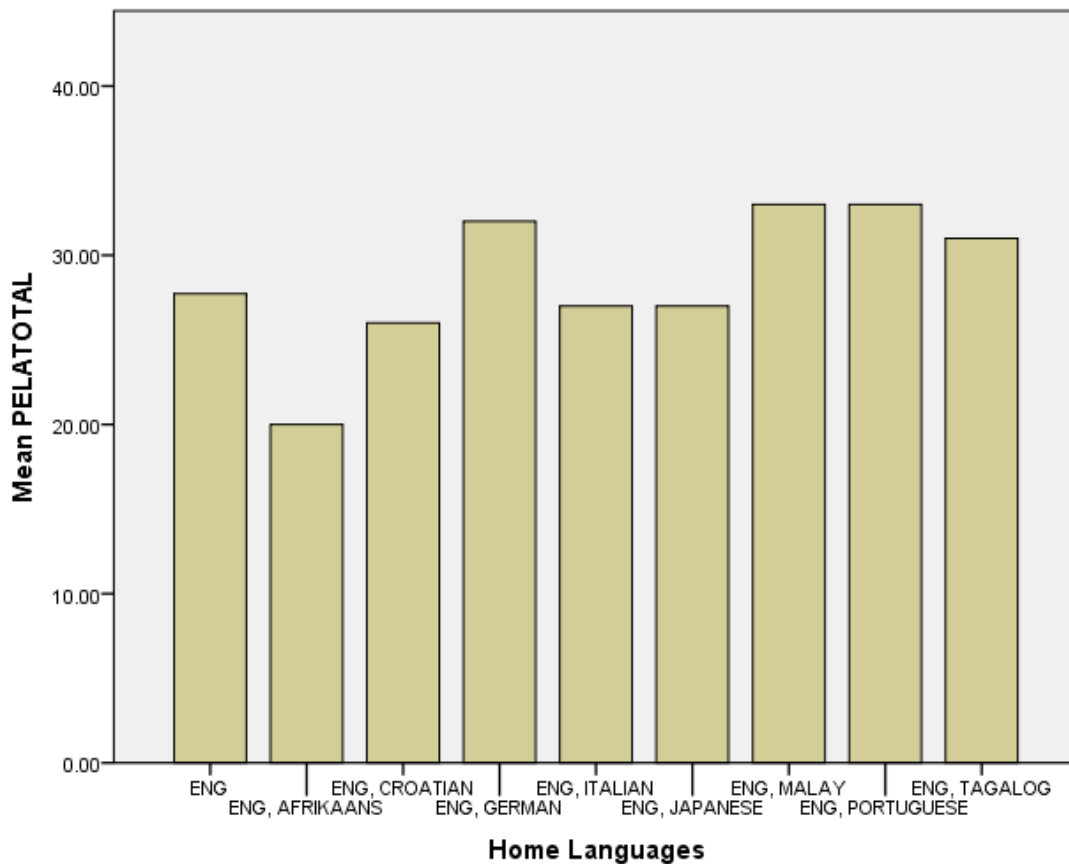
Figure 4.13 Mean PELA total by home language

A correlation analysis was then conducted to investigate whether a
relationship exists between total PELA scores and literacy achievement as measured
by overall performance in the first year literacy unit. This analysis used a Pearson
product-moment correlation coefficient. Preliminary analyses were performed to
ensure there were no violations of the assumptions of normality, linearity and
homoscedasticity. There was a small (Pallant, 2016) positive correlation between the
two variables, $r = 0.190$, $n = 61$, $p = 0.143$ indicating that high PELA scores correlate

to a small degree with high overall literacy scores. However, this correlation is not significant at the 90% level. A calculation of the coefficient of determination revealed a small shared variance between the variables of total PELA score and literacy achievement of 3.61%. In other words total PELA scores help explain 3.61% of a prospective pre-service teacher's literacy score.

A one-way analysis of variance was then used to investigate if there was a statistically significant difference in literacy scores for prospective pre-service teachers from different PELA grade categories. There was not a significant effect of PELA grade on literacy score at the $p<.05$ level for the categories of the different PELA grades of Fail, Pass, Credit, Distinction and High Distinction [$F(4,56) = 1.456$, $p = .228$]. To check whether this non-significant result was due to lack of statistical power a power calculation was performed on the results of this one-way analysis of variance and it revealed the actual power of this result was 0.9514254. These results indicate that there is no statistically significant difference in literacy scores based on prospective pre-service teachers' PELA grades, with the power calculation indicating a strong lack of statistical significance. The results of the correlation analysis and one-way analysis of variance demonstrate that whether the analyses used include the independent variable of PELA score or PELA grade there is no statistically significant difference on the dependent variable of prospective pre-service teachers' literacy scores. Therefore, PELA scores are not an effective predictor of prospective pre-service teachers' literacy achievement in this research study.

A multiple regression analysis was then used to evaluate how much of the variance in literacy scores could be explained by prospective pre-service teachers'

81

total PELA scores. The output of this analysis was checked to ensure it did not violate the assumptions made by a multiple regression model. This analysis of the output revealed weak correlations between the independent variables of PELA Spelling, reading, writing and total PELA scores. The tolerance levels and Variance Inflation Factor (VIF) were also checked and showed a low level of collinearity and low possibility of multi-collinearity. The Normal P-P Plot also demonstrated no major deviations from normality as shown in figure 4.14. The scatterplot and Mahlanobis distances showed four outliers in the data. However the Cook's distance value of 0.243 reveals these present no major issue for the use of the analysis model. The beta value was largest for the variable of total PELA score, *SE B* = 0.165, however this value represents a weak correlation. This beta value therefore indicates that total PELA score makes the strongest contribution to explaining literacy score of the independent variables of PELA spelling, PELA reading, PELA writing and PELA total but all of the independent variables in this analysis have a weak correlation with literacy score.
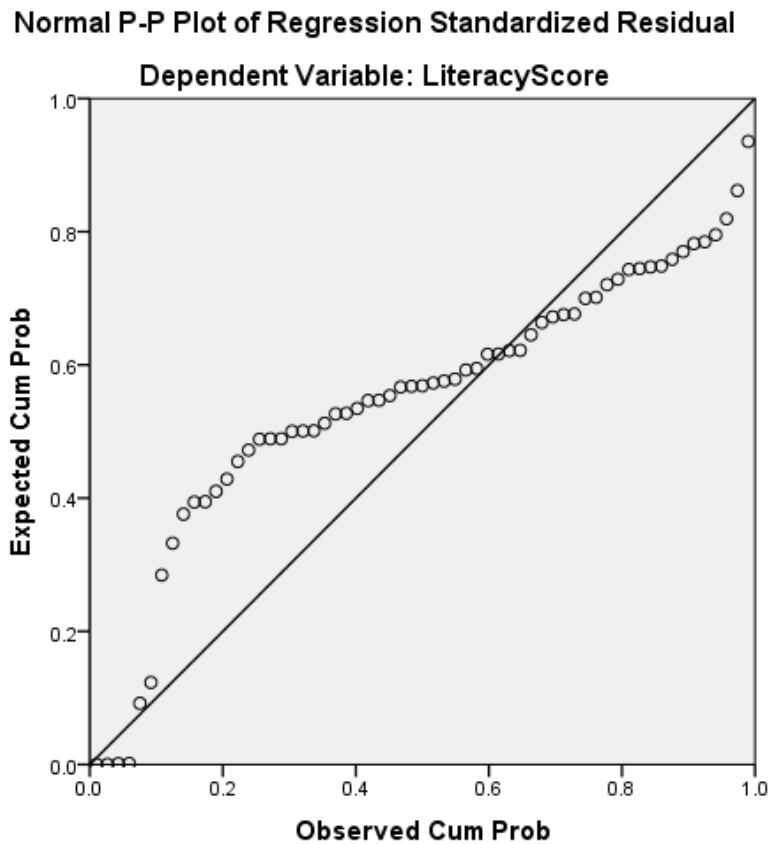
Figure 4.14 Normal P-P Plot from Multiple Regression Analysis of PELA scores

contribution to literacy scores

The R squared value output from the multiple regression analysis of 0.039

demonstrates that the independent variables related to PELA results, both overall and

for each component task, explain only 3.9% of the variance in literacy scores. The

part correlation coefficient, which identifies the unique explanation of literacy score

outcome from PELA total is 0.131. This result indicates that PELA total explains only

1.72% of a prospective pre-service teachers' literacy score. The part correlation

coefficient values for the other independent variables show that scores on the

individual tasks in the PELA explain less than 1% of the variance in prospective pre-

service teachers' literacy scores.

4.3. Phase Two

4.3.1 Demographic Information

Six prospective pre-service teacher volunteers who met the research project criteria of achieving success with literacy by earning a grade of a Distinction or High Distinction in the first year literacy unit participated in the phase two qualitative data collection for the research project. Phase two data were collected using self-reflection questionnaires and semi-structured interviews. The demographic information on the participants was drawn from their PELA papers used in phase one.

The participants in this second phase of the research were all female as were all the prospective pre-service teachers who achieved the success criteria. This demographic profile is unsurprising as the majority (84%) of prospective pre-service teachers enrolled in the first year literacy unit were female. Of the six participants in this phase of the research, two (33%) reported that they entered their ITE course via an ATAR score and the remaining four (67%) reported their entry pathway into the ITE course as via the research institution tertiary enabling program, Foundation Year. The entry pathway of phase two participants is shown diagrammatically in figure 4.15 below. This demographic profile is representative of the cohort as 84% of prospective pre-service teachers in the first year literacy unit entered via these two pathways. As explained in the phase one demographic information, this cohort is representative of other cohorts in the first year literacy unit as the majority of prospective pre-service teachers enter via one of these two pathways each semester. The phase one demographic information also explained that this is additionally representative of the patterns found in entry pathway by Australian Institute for Teaching and School Leadership (2017).

Additionally, the demographic information drawn from the participants PELA papers revealed a mix of prospective pre-service teachers background as either the first in their family to attend university or not the first in their family to attend university. Two participants (33%) reported they were not the first in their families to attend university, while the remaining four participants (67%) reported they were the first member of their family to attend university. This demographic information related to whether participants were the first member of their family to attend university or not is shown diagrammatically below in figure 4.16.
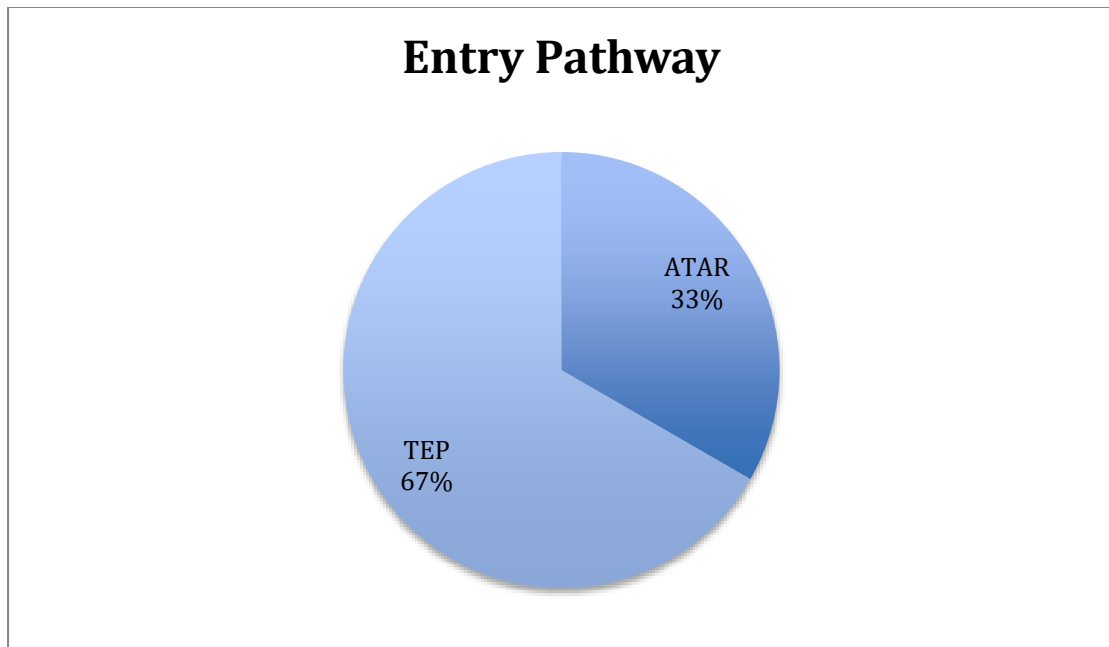
Figure 4.15 Phase Two – Entry Pathway of Participants
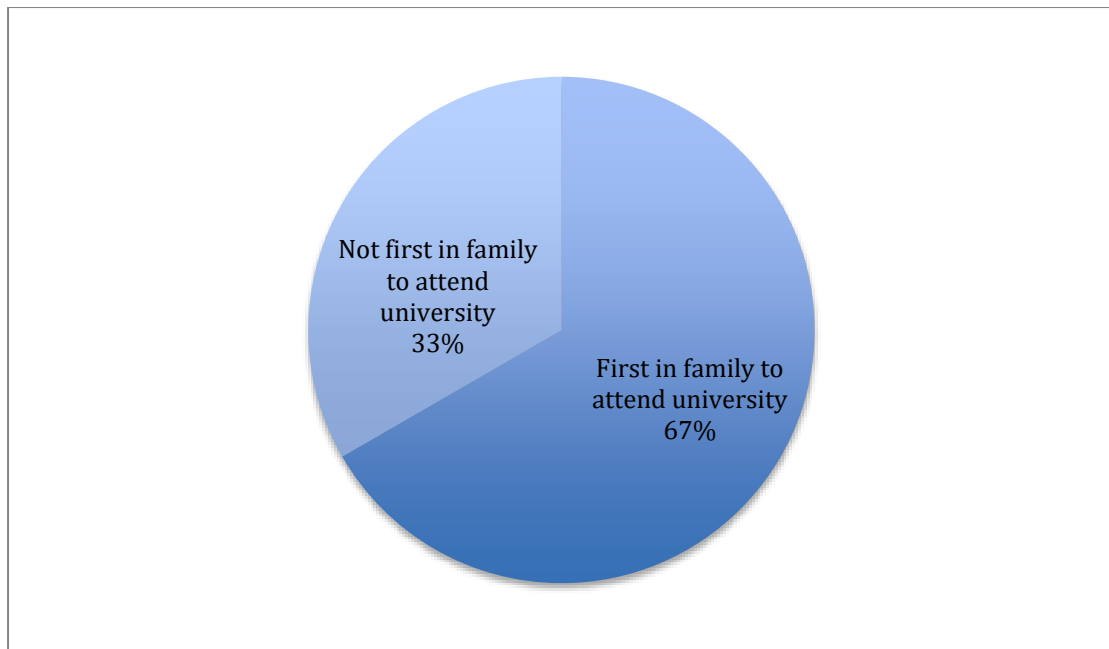
Figure 4.16 Phase Two – First Member of Family to Attend

4.3.2   Results related to Literacy Self-Efficacy

Prospective pre-service teachers completed a self-reflection questionnaire using a ten point Likert style scale immediately prior to the semi-structured interview and their responses on this questionnaire were discussed further in the interviews, where appropriate. Preliminary quantitative analysis was performed to examine the findings from the self-reflection questionnaires and allow for further qualitative analysis of the patterns found in the self-reflection questionnaire responses. The data on prospective pre-service teachers' literacy self-efficacy collected in the interview process and from the questionnaires was then analysed to identify the codes, categories and key themes it presented. A summary of the prospective pre-service teachers' responses on the self-reflection questionnaire is provided below as Table 4.3 and an overview of the qualitative analysis is presented below as Table 4.4.

Question	5 Cautious	6 Somewhat cautious	7 Somewhat confident	8 Confident	9 Very Confident	10 Extremely confident
I am able to demonstrate literacy skills effectively		17% (1)		83% (5)		
I am able to understand new literacy concepts from the unit effectively		17% (1)	50% (3)	33% (2)		
I am able to use online and physical resources to improve my literacy skills		33% (2)	17% (1)	33% (2)	17% (1)	
I am able to plan for literacy tasks effectively			33% (2)	17% (1)	33% (2)	17% (1)
I am able to remember new information about literacy from the unit		33% (2)	67% (4)			
I am able to teach literacy concepts effectively	17% (1)				67% (4)	17% (1)

Table 4.3 *Likert –style scale summary of responses on self-efficacy questionnaire. Results are presented as both a percentage and the number of respondents in brackets below.*

Topic	Codes	Themes	Theory
Confidence in own literacy skills	Work Previous course/already learnt Previous failure (learning from)	Work, study and other factors build prospective pre-service teachers'	Confidence is related to experiences prospective pre-service teachers

		confidence in their literacy skills.	attribute as positive and/or helpful.
Confidence in ability to understand new literacy concepts	Previous course Strong at school Knew content but needed to learn terminology Helpful assignment feedback Helpful tutor/effective explanations	Feedback and support at school and/or university builds confidence. Prospective pre-service teachers' previous experiences also built their confidence.	Confidence is related to prospective pre-service teachers' previous experiences as well as their perception that they received helpful feedback and support.
Confidence to use resources and plan for literacy	Use of textbook and MWL Still need to work Reading (general) helps Taught to plan lots of times (repetition)	Using textbook and MWL. Knowing literacy is something you can (and need to) work at. Taught before/repetition.	Confidence is related to; -using the textbook and MWL (even when not easy), -understanding literacy skills are something that can be improved, -making connections and repetition.
Confidence to remember new literacy information	Balancing time Applicability/modelling of content Repetition/take a while Enjoyed it therefore 'got it'	Clear purpose and use for content. Time and repetition are key.	Prospective pre-service teachers feel confident they can remember when they are clear about the purpose of literacy content and can see how they will use it in their career. Time and opportunities to revisit content also help build confidence in recall of literacy information.
Confidence to teach literacy	Positive practicum experiences	Positive practicum experiences.	Positive experiences on

	Work (paid or unpaid) Nervous to be 'right'/ teach correctly	Work (paid and unpaid). Concern about teaching correctly.	practicum or from their paid or unpaid work built confidence. Some prospective pre-service teachers still concerned about teaching literacy correctly.

Table 4.4 *Themes and Theories in Qualitative Questionnaire and Interview Data*

The first question on the self-reflection questionnaire examined the prospective pre-service teachers' feelings of self-efficacy regarding their ability to demonstrate literacy skills effectively. The majority of the prospective pre-service teachers, 83%, or five of the six interview participants, were confident that they could demonstrate effective literacy skills and rated their confidence eight on the ten-point scale. Analysis of their responses in the semi-structured interviews showed that they attributed this confidence to work, study and other factors such as: learning from their previous failures; being bilingual; having teachers who were willing to help them; using strategies such as looking up new or unfamiliar words; and having always enjoyed or been strong at literacy tasks. These themes identified in the analysis highlight the relationship between a strong sense of self-efficacy related to using literacy skills and a range of experiences that prospective pre-service teachers attributed as positive or helpful in developing these literacy skills. The positive experiences prospective pre-service teachers reflected on from their paid or unpaid work or previous courses of study, as well as the other factors they mentioned, also contributed to their sense of self-efficacy related to their personal literacy skills.

The second question on the self-reflection questionnaire examined the prospective pre-service teachers' feelings of self-efficacy regarding their ability to understand new literacy concepts from the first year literacy unit effectively. Five of the six prospective pre-service teachers rated themselves a seven or eight out of ten on the Likert style scale indicating that they were somewhat confident or confident in their capacity to learn new literacy concepts. Only one prospective pre-service teacher rated herself as somewhat cautious regarding their ability to understand new literacy concepts from the first year literacy unit effectively. Further analysis from the semi-structured interviews revealed prospective pre-service teachers felt that feedback, support from tutors and their previous experiences were critical factors in them developing this confidence in their ability to master new literacy concepts. The prospective pre-service teachers indicated that perceiving the feedback and support they received was helpful was what made it most useful. The prospective pre-service teacher who rated herself lowest on this measure said in her semi-structured interview "I think I was pretty successful last year, I feel a lot more confident that I can do it now", she went on to say "I think a lot of it was to do with the tutor". Her perception that her tutor was supportive and her previous experience of achieving a high grade for the first year literacy unit had a positive impact on her feeling of self-efficacy related to learning new literacy concepts.

The prospective pre-service teachers' confidence to use resources and plan effectively for literacy tasks was investigated. Prospective pre-service teachers' rating on these measures varied from five up to ten on the Likert style scale, indicating a range of perceptions regarding their feelings of self-efficacy to use resources and plan

for literacy tasks. Two prospective pre-service teachers were somewhat cautious about their ability to use resources to support their literacy learning, with the remaining four prospective pre-service teachers confident about their ability to use resources to support their literacy learning, including one prospective pre-service teacher who was extremely confident she could plan for literacy tasks. The qualitative analysis revealed a range of factors that impacted the prospective pre-service teachers' self-efficacy on these measures. All the prospective pre-service teachers interviewed reported that they had used the textbook and online study modules (My Writing Lab [MWL]) to some extent. Even the prospective pre-service teachers who also commented that they found understanding the textbook difficult or that the online study modules were complex to navigate and work through reported that they had used the textbook and online study modules.

The other factors that positively impacted on the prospective pre-service teachers' self-efficacy related to accessing resources and planning for literacy tasks. These factors included having an understanding that literacy skills are something that can be improved, making connection between new and previously taught concepts and opportunities for repetition. For example, the prospective pre-service teachers who rated themselves as confident and extremely confident to plan for literacy tasks reported that they had been taught the skills for planning an essay many times, by many different teachers. One prospective pre-service teacher demonstrated her confidence with planning for literacy tasks during the semi-structured interview when she commented that "If I feel unmotivated to do something I go, 'Okay, well at least I could plan for it' and it gets you unstuck". The prospective pre-service teachers' understanding that literacy skills are something that can be learnt rather than being a

fixed attribute or quality demonstrates Dweck's (2010) notion of a growth mindset. Their perseverance in continuing to read the textbook or work through the online modules, even though some of them found these tasks difficult, also demonstrates the growth mindset suggested by Claro et al. (2016). The prospective pre-service teachers viewed their effort as critical to their mastery of the content rather than viewing their difficulties with these tasks as defining their ability to master literacy concepts.

The prospective pre-service teachers' self-efficacy related to remembering new literacy information was considered. Most prospective pre-service teachers (four out of six) rated themselves as somewhat confident with this measure of self-efficacy, with the remaining two prospective pre-service teachers (33%) rating themselves as somewhat cautious. Factors that influenced the prospective pre-service teachers' confidence with remembering new literacy concepts identified in the qualitative analysis of their responses included their ability to balance the competing demands on their time, the applicability of the content, the effectiveness of the explanation or modelling provided by their tutor of the content. Other factors identified by prospective pre-service teachers that positively influenced their confidence were opportunities for repetition and time to digest new information, as well as feeling they were able to learn more easily when they enjoyed the content. The importance of the relevance of the new literacy concepts to prospective pre-service teachers and what they considered they would do in their future classrooms was highlighted by the prospective pre-service teacher who stated "Showing examples of how to teach is what we actually need". This sentiment was shared by other prospective pre-service teachers, as was the feeling that "It's just something that I've got to repeat a bit" or "It just takes my brain a while to remember". These comments indicate the prospective

pre-service teachers' self-efficacy is related to their understanding of the purpose and uses of their new literacy learning, and to the amount of time and number of opportunities that they had to digest and revise new literacy learning.

Finally, the prospective pre-service teachers' self-efficacy related to teaching literacy was examined. Only one prospective pre-service teacher rated herself as cautious about her ability to teach literacy, with the other five prospective pre-service teachers, 83%, rating themselves as very confident or extremely confident in their ability to teach literacy. A key theme identified in the qualitative analysis of prospective pre-service teachers' self-efficacy to teach literacy revealed that positive experiences on practicum, or from paid or unpaid work with children, were critical to developing the prospective pre-service teachers' confidence to teach literacy. The prospective pre-service teacher who rated herself as cautious about her confidence to teach literacy has not yet been on a teaching practicum and, although she was volunteering at a school, she would have had considerably less experience working with children than the other interviewees. The majority of prospective pre-service teachers rated themselves highly on the Likert style scale related to their confidence to teach literacy. However many of the pre-service teachers also commented on their concern about being able to teach literacy concepts correctly. This concern was illustrated by the prospective pre-service teacher who said "It's scary when you have to teach other people, and you don't want to be teaching them the wrong thing" and implied by other prospective pre-service teachers when they said "I feel like it's going to be a challenge" and "I don't think I could do it by myself". Even those prospective pre-service teachers who demonstrated feelings of self-efficacy related to literacy teaching based on their positive experiences from practicum or working with children

also expressed concern about the challenges that lay ahead of them related to the teaching of literacy.

4.3.3   Results related to Previous Literacy Experiences

Qualitative interview data was collected and analysed to reveal the key themes related to the six participant prospective pre-service teachers' previous literacy experiences. These themes were identified by examining the data to identify codes and categories that described the patterns in the prospective pre-service teachers' responses and then assigning themes to the patterns that emerged (Saldana, 2009). A summary of the key themes identified is presented in Table 4.5.

Topic	Codes	Themes	Theory
Literacy experiences and confidence at beginning of course	Prospective pre-service teachers are strong at English. Prospective pre-service teachers are (sometimes cautiously) confident of success with literacy.	Strength in English, whether innate or developed, created (sometimes cautious) confidence with literacy in prospective pre-service teachers.	Success with English prior to university, whether achieved easily or with significant effort, built both competence and confidence in prospective pre-service teachers.
Personal understanding of literacy	Reading and writing. Communication (all forms). Understanding.	Literacy centres on reading and writing; And application of reading and writing skills.	Competent prospective pre-service teachers understood literacy as the effective application of reading and writing skills.
Current literacy skills	Good/confident. Room for improvement/ still need to learn. Practice/repetition.	Literacy learning is a process. Personal role in the process of literacy learning.	Competent prospective pre-service teachers understand literacy learning as a process and can identify factors that support this process.
Thoughts on the first year literacy unit	Useful elements. Difficult elements. Suggestions for improvements.	Link between tasks and their application helped. Working online, reading text and PELA follow up are less practical, therefore harder. More practical ideas for teaching and using literacy skills could be added.	Competent prospective pre-service teachers like, understand more easily and are more motivated when they can see how they will be able to use new literacy skills and knowledge in their career.

Table 4.5 *Themes and Theories in Qualitative Interview*

The prospective pre-service teachers who had demonstrated literacy

competence in the first year literacy unit were asked about their literacy experiences

prior to their ITE course While some prospective pre-service teachers recalled 'always being good at literacy' others explained that they had failed assessments. These experiences included one prospective pre-service teacher who recalled performing badly on the year five literacy tasks in the NAPLAN and attending tutoring in year five in an attempt to address this poor performance and another prospective pre-service teacher who was counselled into a non-ATAR English class for year eleven and twelve based on her poor performance on a year ten English assessment. Not all the prospective pre-service teachers had always experienced success with literacy tasks prior to their ITE course. However they all spoke about having supportive parents and teachers at some point in their education who invested time in helping them to learn literacy concepts. Those prospective pre-service teachers who had experienced failure with literacy tasks in the past spoke about the impact of these effective teachers on not only their knowledge but also their motivation to learn, with one prospective pre-service teacher explaining "because that teacher put so much into me, I really wanted to do well for her". Even though this prospective pre-service teacher had not always been successful with literacy learning, her motivation to learn literacy skills and her ability to master these skills was positively influenced by her experience of an effective teacher. This example highlights the potential for individual effective teachers to make a significant and long lasting impact on both students' literacy competence and their attitude to literacy learning. This finding from the qualitative interview data will be further explored in the discussion section in the following chapter.

Participants were then asked about their confidence regarding literacy and literacy learning at the beginning of their ITE course. Five of the six interview

participants reflected that they felt somewhat optimistic at the beginning of their ITE course about their ability to meet the literacy demands of the course. Those prospective pre-service teachers who did not express optimism about their literacy skills at the beginning of their ITE course spoke about the high expectations of teachers regarding literacy skills and their concern about how to meet these expectations. The prospective pre-service teachers who began the semester concerned about their ability to master the literacy skills required for becoming a teacher explained the feedback from early assessment tasks within the first year literacy unit helped them to develop confidence that they would be able to master the literacy content and pass the unit. The prospective pre-service teachers who began the first year literacy unit less optimistic and developed a sense of cautious optimism over the course of the unit were those who have experienced failure with literacy tasks in the past. These prospective pre-service teachers spoke about recalling literacy content they had learnt previously as the semester went on, and feeling increasingly positive about their literacy competence after reviewing their marked work when it was returned to them. The prospective pre-service teacher counselled into a non-ATAR English class in high school highlighted the role of an effective teacher in building her confidence in the first year literacy unit, saying "it helps having a good teacher giving you that confidence again". Although she had not always experienced success with literacy tasks, her optimism about her ability to develop literacy competency grew as her confidence grew in her teacher and her teacher's ability to support her learning.

Five of the six interviewees began their description of their personal understanding of literacy with the terms 'reading' and 'writing'. Each respondent then went on to offer other aspects they considered integral to the concept of literacy and

although different terms were used these were synthesised into the codes of communication, understanding and comprehension. These synthesised terms can all be considered ways to apply the skills of reading and writing to make meaning of the ideas of others and share one's own meaning with others. This awareness of literacy as the skills to use language and the ability to apply these skills demonstrates the shared understanding of these competent prospective pre-service teachers that literacy is the application of reading and writing rather than simply the development of the skills themselves. Therefore, prospective pre-service teachers felt that knowing when and how to apply their evolving literacy skills was the true demonstration of literacy competency.

Not all interview participants felt confident in their current literacy skills. However those who were not confident focused on the notion of 'room for improvement' and that there are still many things that they need to learn. Their responses highlighted their understanding that literacy learning is an ongoing process rather than a finite goal. The prospective pre-service teachers who did not characterise their current literacy skills as 'good' or 'strong' instead spoke about their understanding of their personal role in continuing to improve and develop their literacy skills and the importance of revision and repetition. These prospective pre-service teachers were those who had experienced failure with literacy tasks in the past. The prospective pre-service teacher who performed poorly on the year five NAPLAN and received follow up literacy tutoring stated "I think English or literacy …will always be an aspect of concern [for me]". This comment reveals her underlying belief that literacy is a process and alludes to her belief that she plays a critical role in her own literacy development; a viewpoint that was shared by many of

the interviewees. Collectively, the prospective pre-service teachers identified a range of factors that impacted their current literacy skills and how they felt about them. These factors included having helpful tutors, revision of previously taught content (and being able to recognise that they know something about the content already), opportunities for practice and repetition, as well as time to digest new content. When these factors that support the enhancement of literacy skills were in place, prospective pre-service teachers indicated they felt more confident in their literacy skills and their own role in the further development of these skills.

All interviewees reported enjoying the first year literacy unit and were able to name multiple aspects of the unit they enjoyed. These positive aspects of the unit were grouped together and coded as 'useful elements' (Saldana, 2009). Useful elements included the use of children's literature and picutre books, practical activities and clear links between the text and in-class activities. Prospective pre-service teachers identified that a key component of all of the useful elements of the first year literacy unit identified by was that they were highly practical and focused on strategies that could be implemented in the classroom for the teaching of literacy. Prospective pre-service teachers commented that they had used these practical strategies on practicum, with student/s who they were tutoring, in paid and volunteer roles working with children and one prospective pre-service teacher with her own child.

Prospective pre-service teachers also commented on aspects of the unit they found most difficult. These aspects were coded and categorised as 'difficult elements' (Saldana, 2009). Some of the difficult elements mentioned included interpreting the

formal academic language used in the text book, issues related to accessing and working through online modules of work, managing their workload and concerns about missed classes, and being unclear about the purpose of the additional workshops associated with the unit. In contrast to the elements identified as useful by prospective pre-service teachers, these difficult elements were far less practical and further removed from the activities prospective pre-service teachers considered they would be performing as classroom teachers. The more abstract nature of these elements made them more challenging for prospective pre-service teachers as they did not enjoy them as much, learn them as quickly or easily or find them as motivating.

During the semi-structured interviews, prospective pre-service teachers also gave responses that were coded and categorised as 'improvements to the unit' (Saldana, 2009). These suggestions for adapting or improving the unit focused on including more examples of lessons that could be used in a primary school English classroom, more discussion of spelling and grammar and adding a focus on academic writing for teachers to use in their career, such as resume writing and job applications. Similarly to the 'useful elements', these examples cover the aspects of literacy that the prospective pre-service teachers perceive they will need to teach in their future classrooms, with the exception of the addition of a focus on resumes and job applications. All the suggestions for improvement of the unit from prospective pre-service teachers were practical and, in their perception, relevant to their future careers as classroom teachers.

4.4. Overall summary of results

The results of this research study have been reported in relation to the four sub-questions posed to address the central research question of: What factors impact on prospective pre-service teachers' achievement in a first year literacy unit? The research sub-questions are:

1. What is the relationship between a prospective pre-service teacher's entry pathway and his/her achievement in a first year literacy unit?

2. What is the relationship between a prospective pre-service teacher's Post Entrance Literacy Assessment (PELA) results and his/her achievement in a first year literacy unit?

3. What is the relationship between a prospective pre-service teacher's perceptions of self-efficacy with literacy and his/her achievement in a first year literacy unit?

4. What is the relationship between a prospective pre-service teacher's previous experiences with literacy and his/her achievement in a first year literacy unit?

The results of this study indicate that prospective pre-service teacher entry pathway is a reliable predictor of literacy achievement within the first year literacy unit in which the study was undertaken. The results also indicate that a prospective pre-service teacher's PELA score is not an effective indicator of their likely literacy achievement. The results also found that the prospective pre-service teachers who demonstrated achievement in the first year literacy unit possessed strong feelings of self-efficacy, or as Haimovitz and Dweck (2017) describe a 'growth mindset' (p. 1849), related to literacy learning. The results further revealed that the prospective pre-service teachers who demonstrated achievement in the first year literacy unit all had some experience of success with literacy tasks previously. Whether this success had come easily or not was not found to impact the prospective pre-service teachers'

ability to achieve success in the first year literacy unit. The implications of these

results will be discussed in the following chapter.

Chapter Five

Discussion and Conclusion

5.1.Introduction

The purpose of this research was to investigate the factors that impact prospective pre-service teacher literacy achievement early in their initial teacher education (ITE) course. This chapter draws together the findings of the research study to address the central research question: What factors impact on prospective pre-service teachers' achievement in a first year literacy unit? The chapter also addresses the specific research questions that guided the research which were:

1. What is the relationship between a student's entry pathway and his/her achievement in a first year literacy unit?

2. What is the relationship between a prospective pre-service teacher's Post Entrance Literacy Assessment (PELA) results and his/her achievement in a first year literacy unit?

3. What is the relationship between a prospective pre-service teacher's perceptions of self-efficacy with literacy and his/her achievement in a first year literacy unit?

4. What is the relationship between a prospective pre-service teacher's previous experiences with literacy and his/her achievement in a first year literacy unit?

In this chapter the key findings and inferences from the research study will be discussed in relation to what they mean for prospective initial teacher education students, initial teacher education providers and education policy makers. Table 5.1

summarises the key findings of the research in relation to the research questions. The recommendations, limitations and future directions for research are then discussed.

Area	Findings
Entry pathway	• Moderate effect as predictor of literacy achievement • Prospective pre-service teachers from an ATAR entry pathway who are first in their family to attend university achieved highest literacy scores • Prospective pre-service teachers from enabling program who are first in their family to attend university achieved lowest literacy scores
PELA results	• Small positive correlation between literacy achievement and PELA score • PELA explains only 3.6% of prospective pre-service teachers' literacy scores • Scores on the individual PELA tasks explain less than 1% of the variance in literacy scores
Self-Efficacy	• Positive experiences related to literacy from paid or unpaid work and previous study increase literacy self-efficacy • Prospective pre-service teachers that experienced literacy success viewed their effort as critical to their mastery of literacy content • Self-efficacy relates to understanding of the purpose of new literacy learning, and time and opportunities to digest new literacy learning

Previous literacy experiences	• Positive impact of individual effective teachers • Confidence in teacher and his/her ability to support learning increases prospective pre-service teacher optimism related to literacy learning
Overall	• Entry pathway is a moderate predictor of literacy achievement • PELA is not a predictor of literacy achievement • Literacy self-efficacy is evident in prospective pre-service teachers that demonstrated literacy achievement • Positive experiences with individual teachers were reported by prospective pre-service teachers that demonstrated literacy achievement

Table 5.1 *Key finding of the research study*

5.2. Entry Pathway

Prospective pre-service teachers' entry pathway into an ITE course have been long been considered a predictor of their literacy competence as is evidenced by the continuing attention to prospective pre-service teacher entry pathway in both the media (Plibersek, 2017) and education policy (Australian Institute for Teaching and School Leadership, 2013). The quantitative analysis in this research study revealed that in the study cohort entry pathway was a moderate predictor of literacy achievement, and is able to explain 29.2% of the variance in literacy achievement. The analysis also established that prospective pre-service teachers entering their ITE course via an ATAR pathway were more likely to demonstrate literacy achievement in the first year unit, as measured by their final grade in the unit. This finding supports

the findings of Norton et al. (2018) that students entering a university course with an ATAR above 90 had a low risk (less than 20 per cent) of not completing their course (p. 24).

The analysis also revealed an 11% difference between the highest and lowest mean literacy scores for different prospective pre-service teacher entry pathways. The relationship between an ATAR entry pathway and literacy achievement may be closely tied to the relationship between these students graduating high school and factors such as general measures of intelligence, socio-economic status and the notion of 'cultural capital' discussed by Leese (2010). This finding may also suggest that a high ATAR score is related to student literacy ability. This finding means that prospective pre-service teachers entering their ITE course via the lowest performing non-ATAR pathway scored an average of 11% lower overall for the literacy unit. These findings support the new policies introduced by the Admissions Transparency Implementation Working Group (2017) to increase the transparency of ITE course admission practices and the attention given to ITE student entry pathway in the annual Australian Institute for Teaching and School Leadership (2017) *Initial Teacher Education Reports*. They also indicate that ATAR scores should be retained as one of the measures used in the more sophisticated approach to ITE student selection advocated by the Teacher Education Ministerial Advisory Group (2014).

Another interesting finding from the quantitative analysis of the relationship between entry pathway and literacy achievement is that prospective pre-service teachers in the study cohort that entered their ITE course via an ATAR pathway who were the first in their family to attend university recorded the highest literacy

achievement in comparison to prospective pre-service teachers entering their ITE course via other entry pathways and those prospective pre-service teachers that entered their ITE course via an ATAR pathway that were not the first in their family to attend university. This finding is interesting in that it appears to refute the findings of previous research where students "new to university" were observed to have the weakest literacy skills (Leese, 2010, p. 239). This finding is also dichotomous with the findings of this study discussed below that Foundation Year students who are the first in their family to attend university were the lowest achieving group in the study cohort. This finding must be considered with caution in light of the small cohort used in this research study and is possibly idiosyncratic to this particular cohort therefore it would be valuable to replicate the research with other cohorts.

Further research investigating the factors that lead these students to select to study ATAR courses may provide insight into the reasons for their success in both their high school studies and in the first year literacy unit in which the research study was undertaken. This research may establish that the ATAR courses these students studied provided them with training in academic literacy skills and opportunities to practice both reading and generating academic texts. Another possibility is that the teachers of the ATAR courses provided effective models of academic literacy competence and, in the absence of models in their families, the prospective pre-service teachers duplicated these more closely than prospective pre-service teachers who were influenced by other models of academic literacy competence. Further research into individual case studies of prospective pre-service teachers from this group within a cohort would be useful in understanding the reasons for this pattern and identifying the factors that contribute to the pattern.

Conversely, the results revealed that prospective pre-service teachers entering their ITE course via an enabling program, referred to as Foundation Year at the research institution, who were the first in their family to attend university recorded the lowest literacy achievements in the first year unit in comparison to prospective pre-service teachers entering their ITE course via other entry pathways. These results support the concept of 'cultural capital', discussed by Leese (2010), and its role in the literacy achievement of prospective pre-service teachers in the research study. Cultural capital explains the notion that the expectations and understandings of students from families that would not have traditionally accessed university study often differ from those of staff and other students and that this difference in expectation and understanding disadvantages these students in their studies (Leese, 2010).

Foundation Year students may come to their ITE course with less preparation in academic literacy as they did not take ATAR courses and the impact of this lack of preparation may be compounded by the absence of people close to them that possess and model the literacy skills and competencies required for the demands of university study. A lack of recent practice and effective models of the literacy skills required to meet the academic literacy demands of university may be the underlying issues preventing these prospective pre-service teachers from demonstrating literacy competency. Research into strategies that address this lack of practice and lack of models of effective academic literacy could be useful in identifying appropriate strategies to support these prospective pre-service teachers to develop the literacy competency required for their ITE course and teaching careers. Trialling strategies

such as intensive practice or training in academic literacy skills and investigating the impact of these strategies may provide insight into how to support prospective pre-service teachers entering an ITE course with limited exposure to academic literacy tasks and few models of effective academic literacy.

5.3.PELA Results

The use of on-entry literacy assessment has become more commonplace across Australian universities (*Post-Entry Language Assessment Resource Booklet*, 2017), in particular for ITE course providers in the wake of the introduction of the Literacy and Numeracy Test for Initial Teacher Education (LANTITE) (S. Freebody & Freebody, 2017). The quantitative analysis in this research study revealed that in the study cohort prospective pre-service teachers' PELA results were not a strong indicator of a prospective pre-service teacher's literacy achievement within the first year literacy unit, as measured by their end of unit grade, or of their capacity to develop literacy competency. This finding reinforces earlier research by Palmer et al. (2014) that also found PELA results were not an effective predictor of a student's literacy competency or achievement.

As discussed in the overview of PELA results in the results chapter prospective pre-service teacher PELA score accounts for only 3.6% of a prospective pre-service teacher's overall literacy performance in the first year literacy unit in this study, and each of the three component tasks in the PELA (spelling, reading and writing) explain less than one percentage point of a prospective pre-service teacher's literacy performance in the unit. These findings call in to question the validity and reliability of PELAs as an effective measure of academic literacy and if short

assessments such as these are a sufficiently robust measure of prospective pre-service teachers' academic literacy. They also suggest the need for ITE providers to consider the intended purposes and uses of PELAs (*Post-Entry Language Assessment Resource Booklet*, 2017), especially if PELAs are being implemented by universities to screen prospective pre-service teachers entering an ITE course for benchmark literacy skills. Further research into the intended purposes of the PELA process across institutions and courses is therefore needed to identify the purpose of administering PELAs and the ways PELA data is used in different institutions and courses of study.

The finding that PELA results do not provide a strong indication of prospective pre-service teachers' likelihood of developing literacy competency raises the question why do some prospective pre-service teachers not exhibit well-developed literacy skills at the beginning of their course but develop or reveal these skills by the completion of the first year literacy unit? Research into individual case studies of prospective pre-service teachers that do not meet PELA benchmarks, yet demonstrate strong literacy skills at the completion of the literacy unit, would be useful in understanding this finding further. Possible explanations for this could include that sitting the PELA makes the literacy expectations of university clear to prospective pre-service teachers as it helps them to understand the literacy skills expected of them early in their course. Prospective pre-service teachers are then able to make use of these new understandings in their coursework and assessments throughout the semester. It may also be, that as well as providing prospective pre-service teachers with a clear understanding of the literacy competencies they require, the early feedback provided by the PELA allows prospective pre-service teachers to make the necessary self improvements in their literacy competency over the semester.

Alternatively it could be suggested that often, poor PELA results are used to target additional literacy support to prospective pre-service teachers that demonstrated a need for assistance and this targeted support remediates the literacy deficiency identified in prospective pre-service teachers' PELA results. Further qualitative research into prospective pre-service teachers' perceptions of the accuracy, purpose and value of the PELA may reveal the reasons some prospective pre-service teachers do not demonstrate strong literacy skills in the PELA but are able to demonstrate these skills within the first year literacy unit.

5.4. Literacy Self-Efficacy

High levels of literacy self-efficacy are considered important for teachers and prospective teachers (Petchauer, 2016). Self-efficacy refers to an individual's belief that they can experience success in a particular endeavour (Bandura, 1977) and high teacher self-efficacy has been demonstrated to increase organisation, planning, openness to new ideas, willingness to try new methods, enthusiasm for teaching, perseverance with struggling students and the tendency to be less critical as positive outcomes of teacher self-efficacy (Exley et al., 2008). The qualitative analysis in this research study revealed that in the study cohort those prospective pre-service teachers that demonstrated literacy achievement in the first year literacy unit all had positive literacy experiences prior to the unit.

The prospective pre-service teachers interviewed because they had demonstrated high literacy achievement (as measured in their end of unit grade) all

reflected that positive experiences from their paid or unpaid work or from previous courses of study, at the research institution or elsewhere, were pivotal to the growth of their literacy self-efficacy. The prospective pre-service teachers spoke about the impact of these experiences prior to the first year literacy unit and identified these experiences as formative in them developing a strong sense of literacy self-efficacy. Some prospective pre-service teachers also discussed their positive experiences with the teaching staff and content within the first year literacy unit as further reinforcing their perceptions of their literacy self-efficacy related to learning new literacy concepts in the future.

This finding supports the findings of McKenzie and Schweitzer (2001) and Petchauer (2016) and reinforce that ITE courses must address prospective pre-service teachers' literacy self-efficacy as well as focussing on developing their literacy skills and competencies. Further research in to how the impact of these positive experiences prior to their ITE course could be replicated within an ITE course to increase the number of prospective pre-service teachers who develop a positive literacy self-efficacy is therefore warranted. This further research may contribute to ensuring all prospective pre-service teachers are given the opportunity to develop the positive literacy self-efficacy and strong literacy skills necessary for their success with literacy in their ITE course and their long-term success in their teaching careers.

Self-efficacy is closely related to Dweck's (2010) notion of a growth mindset. A growth mindset has been shown to increase students' feelings of self-efficacy and have a positive impact on how students approach learning new concepts and skills (Dweck, 2010). The qualitative analysis in this research study found that the

prospective pre-service teachers who demonstrated literacy achievement within the first year literacy unit demonstrated a growth mindset as they viewed their own effort as critical to their mastery of the literacy content. This growth mindset was further demonstrated as these prospective pre-service teachers did not view their difficulties with new literacy learning as defining their ability to master new literacy concepts. The prospective pre-service teachers interviewed discussed strategies they employed when they found a literacy learning task difficult, such as breaking tasks down or allowing themselves more time and opportunities to learn and practice new literacy skills or content. This finding reinforces the findings of Claro et al. (2016) that possessing a growth mindset is critical to students' performance on academic tasks and further highlights the need to design learning tasks that foster both achievement and the development of a growth mindset in students. Further research into the kinds of literacy learning tasks used within ITE courses and their effectiveness in developing a growth mindset in prospective pre-service teachers is therefore required to ensure all prospective pre-service teachers are encouraged to develop a growth mindset, not only to positively influence their own learning but to ensure they are able to model a growth mindset to their future students.

Self-efficacy has been linked to student performance in previous research (McKenzie & Schweitzer, 2001; Petchauer, 2016). The qualitative analysis in this research study established that the positive self-efficacy of those prospective pre-service teachers that demonstrated literacy achievement within the first year literacy unit was related to their understanding of the purpose of, and uses for, their new literacy learning, as well as the amount of time and number of opportunities they had to master new literacy learning. Prospective pre-service teachers identified knowing

the reasons for learning new literacy content and being able to identify how they would be able to use this new knowledge in the future was important to how they approached the learning of new literacy concepts.

Those prospective pre-service teachers that demonstrated literacy achievement within the unit discussed that they were motivated to master the new literacy content presented in the unit as they understood they would need to know and use it in the future. The suggested future uses of their new literacy knowledge included exams, further literacy units or in the classroom on teaching practicums or as a classroom teacher. This finding relates to those of Pastorelli et al. (2001) that self-efficacy plays a key role in students' goals and actions. The prospective pre-service teachers in this research study possessed a clear understanding of the purposes of their literacy learning within the unit that led to high levels of self-efficacy. This further highlights the need to ensure high levels of self-efficacy in prospective pre-service teachers to ensure all prospective pre-service teachers share similar high goals in terms of their literacy learning. Further research into the literacy learning goals of prospective pre-service teachers is needed to learn more about the existing goals of prospective pre-service teachers and to identify how to ensure all prospective pre-service teachers are aiming for the high standard of personal literacy required of prospective pre-service teachers and classroom teachers.

5.5. Previous Literacy Experiences

The previous literacy experiences of prospective pre-service teachers vary significantly however, some concerning trends have been highlighted in recent school

assessment data. The most recent *Programme for International Student Assessment* (PISA) data reveals a drop in Australia's performance with a growing number of students ranked in the lowest three levels (Thomson et al., 2017). The most recent *Progress in International Reading Literacy Study* (PIRLS) assessment data revealed Australia was the lowest ranked English speaking country (Meeks et al., 2014). The qualitative analysis in this research study found that individual effective teachers had made a significant and long lasting impact on both prospective pre-service teachers' literacy competency and their attitude towards literacy learning.

Many of the prospective pre-service teachers interviewed because they had demonstrated literacy achievement (as measured by their end of unit grade) spoke about encountering individual teachers that made a significant impact on their literacy learning, in either primary school, high school or post-school educational environments. This finding reinforces the well-documented evidence that teacher effectiveness is the most significant influence on student outcomes. The Centre for Education Statistics and Evaluation (2016) state that effective professional learning for teachers can improve literacy outcomes for their students. Therefore, it can be said that effective pre-service professional learning for prospective pre-service teachers, delivered by effective teachers, has the capacity to improve their literacy outcomes.

Further research into the pre-service professional literacy learning provided to teachers is vital to establish its effectiveness, as is research into the effectiveness of the teaching staff delivering this pre-service literacy professional learning. Establishing what constitutes the most effective curriculum, modes of delivery and role of the teacher educator in pre-service teacher literacy learning is critical to ensure

all ITE providers are able to make a significant and long lasting impact on both prospective pre-service teachers' literacy competency and their attitudes towards literacy learning. The results of effective pre-service teacher literacy learning will be evident in the personal literacy competencies of graduate teachers and also in the results of their effective literacy teaching of their future students. The results of this research study into effective pre-service professional literacy learning are therefore critical as they have the capacity to have long lasting effects on the literacy outcomes of students into the future, addressing both concerns over graduate teacher literacy skills and the concerning trends identified in recent international testing.

An interesting finding of the current research study was that the prospective pre-service teachers interviewed because they had demonstrated literacy achievement (as measured by their end of unit grade) had often had a range of both positive and negative experiences with literacy learning tasks in the past. The qualitative analysis revealed that several prospective pre-service teachers had experienced significant failure at various points in their literacy learning however even limited experiences of success with literacy learning had the ability to positively impact the prospective pre-service teachers' literacy learning outcomes and their confidence in themselves as a literacy learner. These prospective pre-service teachers reported that when they encountered an effective literacy teacher their confidence in the teacher and his/her ability to support their literacy learning also increased their confidence in their own ability to master literacy learning tasks. Further research into how effective teachers influence the literacy learning and perceptions of their students is therefore warranted to explore how this finding can be exploited to support prospective pre-service

116

teachers who come to an ITE course with limited success with literacy prior to their

course and low self-efficacy related to literacy learning.

5.6.Overall

The overall findings of this research study are that prospective pre-service

teacher entry pathway into an ITE course is a moderate predictor of their literacy

achievement within their course. This means that entry pathway should be retained as

one of the measures used in a more sophisticated approach to ITE student selection in

the future, as advocated by the Teacher Education Ministerial Advisory Group (2014).

The research study also found that on-entry assessment scores, referred to as

Post Entrance Literacy Assessment (PELA) scores at the research institution, are not a

predictor of prospective pre-service teachers' future literacy achievement in an ITE

course. This means that further research must be undertaken to establish the validity

and reliability of PELAs as a measure of prospective pre-service teacher academic

literacy. This result also suggests ITE providers must take care to identify the purpose

of administering PELAs and carefully consider the ways PELA data is used (*Post-

Entry Language Assessment Resource Booklet*, 2017) and that PELA data should

therefore be used with caution by ITE providers to screen prospective pre-service

teachers or as a measure in prospective pre-service teacher selection. Further research

is required to establish the most effective uses of PELA data. Possible uses of PELA

data may include to target support to those prospective pre-service teachers most in

need of literacy support to be successful in their ITE course and to communicate the

literacy requirements of the ITE course to prospective pre-service teachers at the early

stages of their studies to allow them to make the necessary improvements in their own literacy skills.

The study also identified that high levels of literacy self-efficacy are evident in prospective pre-service teachers that demonstrate literacy achievement in their ITE course. This means that effort should be made by ITE providers to positively impact prospective pre-service teachers' literacy self-efficacy, as well as their literacy competency, to ensure they develop strong literacy skills and model high levels of literacy self-efficacy to their future students (McKenzie & Schweitzer, 2001; Petchauer, 2016). ITE courses must therefore focus on providing effective pre-service professional literacy learning for prospective pre-service teachers, delivered by effective teachers, as this has the capacity to improve both prospective pre-service teacher literacy outcomes and to positively impact their future students' literacy achievements.

The final finding of this research study was that prospective pre-service teachers that demonstrated literacy achievement in the study cohort had all experienced at least some positive previous literacy learning experiences, even though many also had experienced negative previous literacy learning experiences. This finding highlights the role of individual effective teachers in prospective pre-service teacher literacy outcomes as suggested is critical by the Centre for Education Statistics and Evaluation (2016). ITE course providers must therefore ensure they provide pre-service teachers with exposure to effective literacy teachers, who pre-service teachers have confidence in, to support the development of their personal literacy competencies and a positive attitude towards literacy learning.

In conclusion, the findings of this research study highlight that entry pathway, literacy self-efficacy and previous literacy experience are factors that impact prospective pre-service teacher achievement in the first year literacy unit in which this research study was undertaken. PELA scores were not identified as a factor that impacted prospective pre-service teacher achievement in the first year literacy unit in which this research study was undertaken. Therefore, ITE providers must carefully consider how they can use prospective pre-service teacher entry pathway data as one measure in a sophisticated approach to prospective pre-service teacher selection. They must also investigate how to build prospective pre-service teachers' literacy self-efficacy as part of their ITE course and how to ensure that ITE courses provide prospective pre-service teachers with exposure to effective literacy teachers. Finally, ITE providers must examine the purposes for which they use PELAs, to ensure they are used to identify and target literacy support to prospective pre-service teachers that need it most and to communicate the literacy expectations of university to ITE prospective pre-service teachers early in their course rather than using PELA data to inform ITE prospective pre-service teacher selection.

5.7. Recommendations

A number of areas where further research or action is required were also identified in the discussion of the findings from this research study. Recommendations for further research and action are summarised in Table 5.2 and further discussed in 6.5 Future Directions.

Recommendations

- ATAR score should be retained as one of the measures used in a sophisticated approach to ITE student selection because is has been shown to be a reliable predictor of literacy achievement

- Research into the factors that lead prospective pre-service teachers to select to study ATAR courses because it relates to the finding that students entering an ITE via an ATAR pathway had the highest literacy achievement.

- Further research into the validity and reliability of PELAs and their intended purposes and uses as this study has raised significant doubts regarding their reliability and validity and their ability to accurately predict ITE student literacy achievement

Table 5.2 *Recommendations for Action*

5.8. Limitations

As with any study, there are a number of limitations that must be considered when interpreting the research study results. These limitations include:

- The research was undertaken with a smaller second semester cohort studying the first year literacy unit, and

- Many prospective pre-service teachers in the research cohort were studying the first year literacy unit as part of an enabling program (referred to as Foundation Year at the research institution).

A potential limitation of the research study is the relatively small cohort during the semester in which the research was undertaken. This small cohort may mean that the research findings may not be able to be generalised or transferred to the

wider cohort of prospective pre-service teachers. A follow-up study with a larger first semester cohort may be useful in identifying if the findings of this study can be generalised into larger cohorts.

That many of the participants in the research study were prospective pre-service teachers studying the first year literacy unit as part of an enabling program is also a potential limitation of the study. This population of prospective pre-service teachers that were still prospective ITE students, and had not yet been accepted into an ITE course, could mean the research findings may not be replicated in other cohorts that did not include this population of prospective students. A long-term study of prospective pre-service teachers entering their ITE course via enabling programs would be useful in identifying the factors that impact literacy achievement in an ITE course for this particular group of prospective pre-service teachers.

Although the smaller cohort with a larger number of prospective pre-service teachers studying Foundation Year used in this research presents potential limitations to the research findings it is important to note that the cohort with whom the research study was undertaken produced a broad spread of achievement within the first year literacy unit. This spread of achievement was not dissimilar to the range of achievement within the unit across larger, recent first and second semester cohorts. The study cohort was also representative of a variety of different entrance pathways, self-efficacy ratings and previous literacy experiences. This variation within the study cohort is representative of the broad range of prospective pre-service teachers entering ITE courses as identified by AITSL(2015).

5.9. Future Directions

The first recommendation of this research study is to retain ATAR scores as a measure in any approach to the selection of pre-service teachers. Further research into the reasons prospective pre-service teachers choose to study ATAR or non-ATAR courses is also suggested. An understanding of the factors that led prospective pre-service teachers to select and ATAR or non-ATAR course may support ITE providers in the selection of prospective pre-service teachers and to support prospective pre-service teachers more effectively to meet the literacy demands of their ITE course and the LANTITE. This research would provide further insight into the most effective role of ATAR scores in future selection processes for prospective pre-service teachers.

Additional research across ITE providers to establish the validity and reliability of PELAs is recommended. Investigating the purposes for which ITE providers employ PELAs and the ways they use the data generated by PELAs would be useful to ensure PELA data is used appropriately to target support to those prospective pre-service teachers most in need of it and to highlight the literacy requirements of ITE courses for prospective pre-service teachers. The investigation of case studies of prospective pre-service teachers that do not meet PELA benchmarks but go on to demonstrate strong literacy skills at the completion of the first year literacy unit would compliment the current study and the findings of this research and could therefore further enhance the use of PELA data by ITE providers.

5.10. Personal Impact

The motivation for this study stemmed from the researcher's work with undergraduate and prospective pre-service teacher over the last ten years at two

universities in Western Australia. The researcher was concerned about how best to support the wide range of literacy learning needs in the prospective pre-service teachers she teaches in the first year literacy unit at the research institution. The findings from this research suggest that there are many factors that impact prospective pre-service teacher literacy success and that by addressing these factors within the first year literacy unit the opportunities for all prospective pre-service teachers to experience achievement in literacy can be maximised.

The researcher believes that although prospective pre-service teacher entry pathway into an ITE course is one relevant measure of their preparedness for the academic literacy requirements of their ITE course it cannot be used as the only measure of readiness for the literacy demands of an ITE course. The findings from this research highlight that PELAs provide useful data for targeting support to prospective pre-service teachers that require it, and fulfil an educative function by making literacy expectations clear to prospective pre-service teachers early in their ITE course. However, ITE providers must resist the use of PELA data for other purposes, such as part of the selecting process for prospective pre-service teachers.

The researcher considers literacy self-efficacy critical to the development of effective literacy skills. The findings of this research support this belief and she is committed to addressing prospective pre-service teacher literacy self-efficacy as a critical aspect of the first year literacy unit. Similarly, she believes positive experiences with literacy learning are essential to the development of effective literacy skills. She aims to ensure the prospective pre-service teachers she teaches in the first year literacy unit at the study institution have the opportunity to experience

success with literacy learning in the belief that these positive experiences with literacy learning help build both their capacity for literacy learning and their literacy self-efficacy. The researcher considers these positive experiences with literacy learning and high levels of literacy self-efficacy crucial for the success of her students as future teachers and for their future students also. She therefore believes building the literacy competence and self-efficacy of prospective pre-service teachers can be considered vital to improving the literacy competence of all Australian students.

5.11. Conclusion

Ensuring well-developed literacy skills in prospective pre-service teachers and graduate teachers is vital and the introduction of the Literacy and Numeracy Test for Initial Teacher Education (LANTITE) is evidence of the priority being given nationally to the development of literacy skills in ITE students. This research study has identified the factors that impact prospective pre-service teacher literacy achievement in a first year literacy unit at the study institution and these factors must be considered in the development of units of study and teaching and support materials to meet the literacy learning needs of current and future prospective pre-service teachers.

The recommendations from this research study provide insight to inform: the design of units of study and teaching materials for prospective pre-service teachers; the selection of ITE candidates; the preparation of ITE students for the LANTITE; and how to support ITE students to exit their course with the literacy skills required for success in their teaching career. It is hoped that these recommendations will support the progress of the discussion regarding prospective pre-service teacher

literacy competence beyond the current media and policy focus on course entry

pathway and further regulation of admission processes and move away from the

current focus on the perceived deficiencies of teachers and prospective pre-service

teacher (Honan et al., 2013) to identify strategies that build the literacy competence of

prospective pre-service teachers.

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Appendix 1

Ethics Approval

THE UNIVERSITY OF
NOTRE DAME
AUSTRALIA

19 Mouat Street (PO Box 1225) Fremantle WA 6959
+61 8 9433 0555 | enquiries@nd.edu.au

29 August 2017

Dr Glenda Cain & Mrs Elizabeth O'Sullivan
School of Education
The University of Notre Dame Australia
Fremantle Campus

Dear Glenda and Elizabeth,

Reference Number: 017132F

Project Title: "Initial Teacher Education Student Literacy: Factors that Impact Literacy Achievement of Prospective Pre-service Teacher."

Your response to the conditions imposed by a sub-committee of the university's Human Research Ethics Committee, has been reviewed and assessed as meeting all the requirements as outlined in the *National Statement on Ethical Conduct in Human Research* (2007, updated May 2015). I am pleased to advise that ethical clearance has been granted for this proposed study.

Other researchers identified as working on this project are:

Name	School/Centre	Role
Prof Marion Milton	School of Education	Co-Supervisor

All research projects are approved subject to standard conditions of approval. Please read the attached document for details of these conditions.

On behalf of the Human Research Ethics Committee, I wish you well with your study.

Yours sincerely,

Dr Natalie Giles
Research Ethics Officer
Research Office

cc: A/Prof Shane Lavery, SRC Chair, School of Education

Participant Information Sheet: Phase One

PARTICIPANT INFORMATION SHEET

Initial Teacher Education Student Literacy: Factors that Impact Student Literacy Achievement - *Phase One (Quantitative Data Collection – PELA Data)*

Dear student

You are invited to participate in the research project described below.

What is the project about?

The research project investigates the factors that impact undergraduate primary and early childhood initial teacher education student literacy achievement. It aims to arrive at recommendations for the development of course content and materials to address the literacy learning needs of undergraduate teachers and for the process of selecting candidates for initial teacher education courses.

Who is undertaking the project?

This project is being conducted by Liz O'Sullivan and will form the basis for the degree of Masters of Philosophy at The University of Notre Dame Australia, under the supervision of Dr Glenda Cain.

What will I be asked to do?

If you consent to take part in this research study, it is important that you understand the purpose of the study and the procedures you will be asked to undergo / tasks you will be asked to complete. Please make sure that you ask any questions you may have, and that all your questions have been answered to your satisfaction before you agree to participate.

· You are asked to give permission for your Post Entrance Literacy Assessment (PELA) data and overall unit grade to be used for data analysis purposes.

· You do not need to provide any additional information other than the information collected as part of completing the PELA.

· You will not be identified by name or student number in the data analysis or results from the data analysis.

· If you indicate that you are willing to participate in a follow up interview after you have completed the unit you may be contacted via email after the unit exam results have been finalised. You are free to decline an invitation to be interviewed at this later date if you change your mind or are not available during the interview period.

Are there any risks associated with participating in this project?

There is no foreseeable risk in you participating in this research project.

What are the benefits of the research project?

This project aims to arrive at recommendations for the development of course content and materials to address the literacy learning needs of undergraduate teachers. These recommendations may be of benefit to you in future units of study in your course and will be of benefit to future students enrolling in Ed1610/1611.

What if I change my mind?

<center>**Appendix 3**</center>

<center>**Participant Information Sheet: Phase Two**</center>

PARTICIPANT INFORMATION SHEET

Initial Teacher Education Student Literacy: Factors that Impact Student Literacy Achievement – *Phase Two (Qualitative Data Collection – Interviews)*

Dear student

You are invited to participate in the research project described below.

What is the project about?

The research project investigates the factors that impact undergraduate primary and early childhood initial teacher education student literacy achievement. It aims to arrive at recommendations for the development of course content and materials to address the literacy learning needs of undergraduate teachers and for the process of selecting candidates for initial teacher education courses.

Who is undertaking the project?

This project is being conducted by Liz O'Sullivan and will form the basis for the degree of Masters of Philosophy at The University of Notre Dame Australia, under the supervision of Dr Glenda Cain.

What will I be asked to do?

If you consent to take part in this research study, it is important that you understand the purpose of the study and the procedures you will be asked to undergo / tasks you will be asked to complete. Please make sure that you ask any questions you may have, and that all your questions have been answered to your satisfaction before you agree to participate.

· You are asked to attend the Notre Dame Fremantle campus to complete a written reflection on your feelings of self-efficacy related to literacy and participate in a face-to-face interview.

· You will be interviewed to discuss your literacy self-efficacy and your literacy experiences.

· You will be asked to allow the interview to be digitally recorded so that it can be transcribed word for word.

· You will be emailed a copy of the interview transcript to confirm its accuracy and to clarify your responses.

Are there any risks associated with participating in this project?

There are no specific risks anticipated with participation in this study.

What are the benefits of the research project?

This project aims to arrive at recommendations for the development of course content and materials to address the literacy learning needs of undergraduate teachers. These recommendations may be of benefit to you in future units of study in your course and will be of benefit to future students enrolling in Ed1610/1611.

What if I change my mind?

Participation in this study is completely voluntary. Even if you agree to participate, you can withdraw from the study at any time without discrimination or prejudice. If you withdraw, all information you have

<center>135</center>

Appendix 4

Consent Form: Phase One

CONSENT FORM – Phase One (Quantitative Data Collection)

Initial Teacher Education Student Literacy: Factors that Impact Student Literacy Achievement – *Phase One (Quantitative Data Collection – PELA Data)*

· I agree to take part in this research project.

· I have read the Information Sheet provided and been given a full explanation of the purpose of this study, the procedures involved and of what is expected of me.

· I understand that I will be asked to give permission for my Post Entrance Literacy Assessment (PELA) data and unit grade to be used in data analysis.

· The researcher has answered all my questions and has explained possible problems that may arise as a result of my participation in this study.

· I understand that I may withdraw from participating in the project at any time without prejudice.

· I understand that all information provided by me is treated as confidential and will not be released by the researcher to a third party unless required to do so by law.

· I agree that any research data gathered for the study may be published provided my name or other identifying information is not disclosed.

· I understand that research data gathered may be used for future research but my name and other identifying information will be removed.

☐   I am willing to participate in a follow-up interview about my literacy experiences after I have completed the unit Ed1610/1611.

Name of participant			
Signature of participant		Date	

· I confirm that I have provided the Information Sheet concerning this research project to the above participant, explained what participating involves and have answered all questions asked of me.

| Signature of Researcher | | Date | |

Consent Form: Phase Two

CONSENT FORM – Phase Two (Qualitative Data Collection)

Initial Teacher Education Student Literacy: Factors that Impact Student Literacy Achievement – *Phase Two (Qualitative Data Collection - Interviews)*

· I agree to take part in this research project.

· I have read the Information Sheet provided and been given a full explanation of the purpose of this study, the procedures involved and of what is expected of me.

· I understand that I will be asked to complete a rating scale and participate in an interview about my literacy experiences. I will also be asked to allow the interview to be digitally recorded.

· The researcher has answered all my questions and has explained possible problems that may arise as a result of my participation in this study.

· I understand that I may withdraw from participating in the project at any time without prejudice.

· I understand that all information provided by me is treated as confidential and will not be released by the researcher to a third party unless required to do so by law.

· I agree that any research data gathered for the study may be published provided my name or other identifying information is not disclosed.

· I understand that research data gathered may be used for future research but my name and other identifying information will be removed.

Name of participant			
Signature of participant		Date	

· I confirm that I have provided the Information Sheet concerning this research project to the above participant, explained what participating involves and have answered all questions asked of me.

Signature of Researcher		Date	

Appendix 6

Email sent to potential Phase Two participants

Dear student

Thank you for participating in phase one of this research project by consenting to the inclusion of your PELA data in the first phase of data collection and analysis and for indicating that you would be interested in participating in a one-to-one interview in phase two.

As the Ed1611 grades have now been finalised and submitted I will be conducting these interviews on campus over the next two weeks. Please let me know some times that you are available between the 28th of November and the 8th of December to participate in an interview during university business hours.

I look forward to meeting with you and hearing your thoughts on the factors that have contributed to your literacy success.

Kind regards,

Liz O'Sullivan

Self Reflection Questions

Phase Two Interview Self Reflection Questions

I am able to demonstrate the literacy skills of reading, writing and spelling effectively

Strongly disagree   Strongly agree

1   2   3   4   5   6   7   8   9   10

I am able to understand new literacy concepts/ideas from the unit effectively

Strongly disagree   Strongly agree

1   2   3   4   5   6   7   8   9   10

I am able to use online and physical resources to improve my literacy skills

Strongly disagree   Strongly agree

1   2   3   4   5   6   7   8   9   10

I am able to plan for literacy tasks effectively

Strongly disagree   Strongly agree

1   2   3   4   5   6   7   8   9   10

I am able to remember new information about literacy from this unit

Strongly disagree   Strongly agree

1   2   3   4   5   6   7   8   9   10

I am able to teach literacy concepts effectively

Strongly disagree   Strongly agree

1   2   3   4   5   6   7   8   9   10

Appendix 8

Semi-Structured Interview Questions

The semi-structured interview topics will include:

- Tell me about your literacy experiences prior to university

- Describe how confident you felt about your own likely success at the beginning of the ITE course

- what do you understand by the term *literacy*?

- How would you describe your current literacy skills?

- How do you currently feel about your literacy skills?

- How do you currently feel about your literacy teaching skills (particularly in relation to going on teaching practicum)?

- What could be done to improve the first year literacy unit?

- What support would you like in regards to literacy as you move beyond this literacy unit?

Post Entrance Literacy Assessment

(PELA)

School of Education

Semester 2

2017

All students entering the School of Education are assessed to establish their current academic literacy. Academic literacy includes reading, writing, spelling, critical thinking and communication. These skills are vital to academic success at university, and university requirements may be very different to the expectations and secondary schooling or training providers.

The PELA is administered by the University as a diagnostic tool designed to identify students that would benefit from support in their undergraduate study. The PELA will not impact on your continuing enrolment or undergraduate unit results.

Students identified by the PELA as requiring support will be advised via email and required to access the support offered by AESC to enhance their literacy skills.

General Instructions

- **Before** commencing the test, please complete the student information on page 2.

- There are three (3) sections to be completed. *Ensure you complete **all** 3 sections.*

  Section One: Spelling

  Section Two: Reading Comprehension Academic Essay

  Section Three: Academic Essay

Student Information Audit   Results:

Spelling =   /20

Reading =   /10

Writing   =   Sound / Needs

Development

Name: [   ]   Student ID: [   ]

1.   Gender: ☐ Male   ☐ Female

2.   Current Course: (e.g. Bachelor of Commerce) [   ]

3.   Entry Pathway to University *(Please tick)*

☐   ATAR   *Score:* [   ]

☐   TEP / Foundation Year

☐   STAT   *Score:* [   ]

☐   Certificate IV in: [   ]

☐   Undergraduate Course [   ]

☐   Other (please specify) [   ]

4.   What subjects did you complete in your final year of high school and at what level? (e.g. Maths 2AB, English 3AB, Foundation Maths, Human Biology 3AB etc.)

142

5.   Language(s) spoken in your family home as a first language: *(You may tick more than one)*

☐ English

☐ Other (please specify) [   ]

6.   Are you the first person in your immediate family to attend University?

☐ Yes

☐ No   [   ]

Privacy Statement

7.   The information provided in this form will only be used for the administrative or educational purposes of the University, or in accordance with your specific consent. The University **will not disclose your personal information** to a third party unless required to or permitted by law or where you have consented to the disclosure. Information relating to how the University collects, uses or discloses your personal information and how you may complain about the University's handling of your personal information is contained in the University's Privacy Policy at http://www.nd.edu.au/copyright.shtml#Privacy.

You have a right to access your personal information that the University holds about you and to seek its correction. If you wish to access your personal information or inquire about the handling of your personal information, please contact the Campus Registrar via email**:** Sydney.Registrar@nd.edu.au

END OF STUDENT INFORMATION AUDIT.
COMMENCE ASSESSMENT TASK ON THE FOLLOWING PAGES WHEN
DIRECTED.

> ### Spelling

Identify the words spelt incorrectly by writing the correct spelling underneath. Write the
letter "N" below the word if no error is shown.

apology	excusable
femenine	primative
equiptment	dicipline
inocence	indentify
flexable	aproximate
separate	accustom
disagreeable	acheive
priviledge	accomodate
responsible	hesitent
imagination	fulfil

(Adapted from Mywritinglab, 2015)

Read this paragraph and then answer the questions about it. Circle the correct answer

There is frequent and often heated debate about the effects of violence in video games. Some believe these games increase levels of aggression in children, whereas others argue that such games actually reduce aggression. Proponents claim that contact between characters in the game is often graphically violent, and that children will copy this in their everyday interactions with others; social learning theory is sympathetic to this view. Those disagreeing with the view believe that children may experience the benefits of catharsis from playing the games, by venting some energy and by relaxing. Will children become desensitised to the consequences of acting aggressively in real life situations by playing out violent scenes? Certainly, the content of the games themselves is of concern. Dietz (1998) examined thirty-three popular video games and found that nearly 80 per cent contained aggression as part of either the immediate object or the long-term strategy.

Question 1:
What can we infer about the writer's perspective on this issue and how do we know?

    A. Violent video games have no effect on children; the writer says this.
    B. Violent video games have mainly good effects on children; the writer draws this conclusion from the evidence.
    C. Violent video games have good effects on some and bad effects on others; the writer is able to support this with evidence.
    D. Violent video games have mainly bad effects on children; the writer's language suggests this.

Question 2:

What is the heated debate about?

    A. The effect of violence in video games
    B. The reasons for violence in video games.
    C. The amount of violence in video games
    D. The levels of violence in video games

Question 3:

At which of the following audiences is the text aimed and how do you know?

A. Children; the text frequently mentions children.
B. Academic audiences; the language used is academic in style.
C. Video game makers; the language is aimed at this audience
D. Aggressive people: the text frequently mentions aggression.

Question 4:

What research is missing and why is this omission important?

A. How old the children are who are playing video games; this is important to our understanding of the issue.
B. Whether most violence is an immediate object or long-term strategy: this is important because it impacts on the conclusions.
C. How children's behaviour changes after playing video games; this is important to presenting a balanced view.
D. How children are affected by violence in TV programs and movies; this important because people care about children.

Question 5:

Which idea does the information from Dietz (1998) support?
A. Children may vent energy and relax by playing video games.
B. Children will copy the violence from video games in their interactions
C. The amount of violence in video games is a cause for concern.
D. Children become desensitised to the consequences of acting aggressively

Question 6:

Social learning theory is connected to the concept of
A. Learning through everyday interactions.
B. Children needing to vent their feelings.
C. The content of the games is important.
D. All of the above

Question7:

The term 'catharsis' is used in the sentence that relates to the benefits of playing the video games.
Which word best describes the meaning of this term?
A. Cleaning
B. Excreting
C. Release
D. Elimination

Question 8:

The most appropriate title for this paragraph would be:

A. Aggression in children
B. Thirty three popular video games
C. Violence and video games
D. Video games

Question 9: If the sentence below contains a spelling error, correct the error by writing the word as it should appear; if there is no error, write N.
The effect of violence in video games needs to be researched thoroughly and in an unbiased and objective manner.

_____

Question 10:

The term 'sympathetic' is used to describe the way

A. The author feels about the problem of violence and video games
B. The feelings children develop by playing the games
C. The agreement between the learning theory and the research
D. All of the above.

SECTION THREE: ACADEMIC ESSAY

Write a well-structured, logical and cohesive persuasive essay on the topic below.

- *Give attention to sentence structure, paragraphing, punctuation and accurate spelling.*
- *Consider the use of a topic sentence and thesis statement to introduce your argument.*

> **ESSAY TOPIC:**
>
> **State your position on the effects of violence in video games making reference to the commentary in the paragraph above (Comprehension task).**

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END OF ASSESSMENT

PELA Assessment Results *(Marker use only)*

Name: [   ]   Student ID: [   ]

School: Education

Spelling [   ] *(Benchmark is 15)* [ ] At or above benchmark – Sound (S)

[ ] On the basis of this assessment, your l literacy skills need development (ND)

Reading: [   ] *(Benchmark is 7)* [ ] At or above benchmark – Sound (S)

[ ] On the basis of this assessment, your reading skills need development. The Academic Support Office will contact you to discuss strategies to support you in improving your reading skills. (ND)

Writing: [   ] *(Benchmark is 7)* [ ] At or above benchmark – Sound (S)

Core Criteria *(Note: not all criteria are weighted equally)*	
There are at least three **well-constructed** paragraphs.	☐ Demonstrated ☐ Not demonstrated
Each paragraph has approximately 250 words.	☐ Demonstrated ☐ Not demonstrated
The writing style **uses formal language** and an **academic tone**.	☐ Demonstrated ☐ Not demonstrated
Writing is **concise, clear and coherent.**	☐ Demonstrated ☐ Not demonstrated
Grammar, spelling and punctuation are used correctly with **minimal errors**.	☐ Demonstrated ☐ Not demonstrated
Writing uses **third person** narrative**.**	☐ Demonstrated ☐ Not demonstrated
There is a **clear thesis statement**.	☐ Demonstrated ☐ Will need time to develop
Response **demonstrates critical thinking.**	☐ Demonstrated ☐ Will need time to develop