QUEENSLAND REGIONAL, RURAL AND REMOTE SENIOR SECONDARY STUDENT PERCEPTIONS OF ENABLERS AND BARRIERS TO SUCCESSFULLY COMPLETING ONLINE COURSES.

A Thesis submitted by

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ABSTRACT

Providing education to all Queensland senior secondary students requires schools, Registered Training Organisations (RTO's) and Universities to employ online learning to deliver curriculum over Queensland's vast geographical region. Many regional, rural and remote senior secondary students across Queensland these online courses to bolster their Senior Education Training Plan (SETP), access Vocational Education training Qualifications, achieve a Queensland Certificate of Education (QCE) or earn on Overall Position (OP) score for University entry requirements.

This study explores what might be done to mitigate barriers and what educators can do to enhance educational outcomes for senior secondary students who access online courses. Over the past decade there has been an increase in research activity in the K–12 sector, most from the teacher's or organizational perspective, and predominately, undertaken outside of Australia. Researchers have identified the need for research to shift focus from the teacher and organizational perspectives to the student experience of online learning. This study aims to address the dearth of student voice literature by researching Queensland regional, rural and remote senior secondary (Year 10–12) student perceptions of the enablers and barriers they experience in online learning.

Based on findings in the literature, focus areas identified for the research and were formalised into three main themes: resources and content, socialization and communication, and finally teacher-student relationships. The research used an Explanatory Sequential Mixed Methods design with quantitative data collection in phase one through the use of an online anonymous survey and follow-up focus groups for phase two. Participants were selected, using a convenience sampling technique, with participants drawn from state secondary schools and non-state schools of distance education across Queensland.

The study contributes original practical and theoretical research outputs. The research discusses the significance of the teacher-student relationship in an online course, highlights the importance of the quality and selection of the resources and content within an online course and finally presents student's perceptions about the role of socialisation and communication within an online course. The research presents a student-centred virtual learning conceptual lens that provides a framework for understanding online learning from the student point of view.

CERTIFICATION OF THESIS

This Thesis is entirely the work of David William Jeffs except where otherwise acknowledged. The work is original and has not previously been submitted for any other award, except where acknowledged.

Principal Supervisor: Professor Emeritus Peter Albion

Associate Supervisor: Professor Patrick Danaher

Associate Supervisor: Dr. Martin Kerby

Student and supervisors' signatures of endorsement are held at the University

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ABBREVIATIONS

Abbreviation	Definition	Scope of Use
ACARA	Australia Curriculum and Assessment Authority	Nationally
ACER	Australian Council for Educational Research	Nationally
ACIQ	Australian Curriculum in Queensland	Nationally
AEU	Australian Education Union	Nationally
AITSL	Australian Institute for Teaching and School Leadership	Nationally
ANR	Annual National Report	Nationally
ASQA	Australian Skills Quality Authority	Nationally
ATAR	Australian Tertiary Admissions Rank	Nationally
AQF	Australian Qualifications Framework	Nationally
COAG	Council of Australian Governments	Nationally
DE	Distance Education	Nationally
DET	Department of Education and Training	National & State
DoE	Department of Education	National & State
ESA	Education Services Australia	Nationally
EQ	Education Queensland	Queensland
F–12	Foundation to Year 12	Nationally
HEA	Home Education Association	Queensland
ICPA	Isolated Children's Parents' Association	Queensland
iNACOL	International Association for K–12 Online Learning	Internationally
ISCA	Independent Schools Council of Australia	Nationally
ISQ	Independent Schools Queensland	Queensland
K–12	Kindergarten to Year 12	Nationally
MCEECDYA	Ministerial Council for Education, Early Childhood Development and Youth Affairs	Nationally
MCEETYA	Ministerial Council on Education, Employment, Training and Youth Affairs	Nationally
MMR	Mixed Methods Research	Internationally
NAP	National Assessment Program	Nationally
NAPLAN	National Assessment Program Literacy and Numeracy	Nationally
NCCDSSD	Nationally Consistent Collection of Data on School Students with Disabilities	Nationally
NSSAB	Non-State Schools Accreditation Board	Queensland
NSW	New South Wales	Nationally
OECD	Organisation for Economic Cooperation and Development	Internationally
OP	Overall Position	Queensland
PISA	Programme for International Student Assessment	Nationally
QCAA	Queensland Curriculum Assessment Authority	Queensland
QCE	Queensland Certificate of Education	Queensland
QCEC	Queensland Catholic Education Commission	Queensland
QCIA	Queensland Certificate of Individual Achievement	Queensland
QCoT	Queensland Core skills	Queensland

Abbreviation	Definition	Scope of Use
QCS	Queensland Core skills	Queensland
QLD	Queensland	Queensland
QTAC	Queensland Tertiary Admissions Centre	Queensland
ROSBA	Review of School-Based Assessment	Queensland
RTO	Registered Training Organisation	Internationally
SAS	Subject Area Syllabuses	Queensland
SETP	Senior Education Training Plan	Queensland
TE	Tertiary Entrance	Queensland
VET	Vocational Education and Training	Nationally

CHAPTER ONE: INTRODUCTION TO THE THESIS

1.1 BACKGROUND OF THE STUDY

With the perpetual evolution of the digital revolution's impact on K–12 education (Lim & Tschopp-Harris, 2018), online learning is taking its place as a prominent player in the delivery of curriculum in schools around the world. Technology has moved from what has been identified as an experimental phase to becoming a core strategy for many educational organisations (Legon & Garrett, 2017). However, in Australia, there is a disparity with regards to the progress online learning is having between Foundation to Year 12 (F–12) and Vocational Education and Training (VET), even though historically Australia has been identified as one of the leading countries in relation to leveraging technology's capacity to deliver education via distance with the introduction of the first School of the Air in 1948 (Stevens, 1994).

At an international level, initial research into online learning predominantly focused on the Higher Education sector; however, since the mid-1990s literature related to Kindergarten-Year 12 (K–12) online learning has been available (Dichev, 2013). Over the past decade there has been an increase in research activity in the K–12 sector with most of this research activity being undertaken outside of Australia (Shattuck, 2015). It has also been noted that, of the material available at an international level, researchers have identified that research in K–12 online learning needs to shift its focus from the teacher and organizational perspective, to the student experience of online learning (Halverson et al., 2017).

Comparing Australian K–12 online learning research with the international literature, Australian is nascent with research into online learning in the F–12 sector with searches for published works related to the F–12 sector yielding little return. The journal Australian Educational Computing reported research into the K–12 sector as maintaining a steady growth in interest in online learning from 2003 to 2010 with articles peaking in 2010 (Zagami, 2015). The lack of research in the Australian context could suggest that Australian educators have a nebulous understanding of senior secondary students' experience of online learning and lack understanding of what the barriers and enablers are that Australian secondary students undertaking online learning may

be experiencing. This thesis addresses the gap in the literature in relation to Australian students' experience of online learning, and specifically addresses the gap in the literature on student voice (Appendix B). This research explores Queensland regional, rural and remote senior secondary (Years 10–12) student perceptions of the enablers of, and barriers to, undertaking study through online learning.

1.2 FOCUS OF THE STUDY

The focus of this study is to investigate a group of Queensland senior secondary student perceptions of enablers and barriers in online learning (Appendix 1). Participants are senior secondary students, Year 10–12, who are undertaking any form of online learning as a part of their Senior Education Training Plan (SETP), in fulfilment of their Queensland Certificate of Education (QCE). This research explores regional, rural and remote student perceptions of the enablers and barriers in at least one of the following online courses: Authority Subjects (OP or academic subjects), Authority Registered Subjects (SAS or vocational subjects), Vocation Educational Training (VET or certificate qualifications) and, in some instances, secondary students participating in university early-entry programs online, such as The University of Southern Queensland's Head Start.

A second focus of this study includes student participants from a range of educational contexts. Specifically, student participants were be drawn from traditional campus-based state, and non-state, secondary education contexts, state and non-state distance education students, as well as home-schooled students. All students participating in this study are full-time students, undertaking a full study load; or engaged in a combination of subjects, such as school-based apprenticeships/traineeships, in concert with other school subjects, which are equivalent to a full-time study load; or are undertaking approved education activities, as specified by the Queensland Curriculum and Assessment Authority (QCAA).

For the purposes of this study, online learners are defined as Queensland senior secondary students from Years 10–12, studying any type of online course, part-time or full-time, in a traditional campus context, or as a home-based learner. A home-

based learner is a student who learns at home while enrolled in a state, or non-state, school of distance education, and is referred to throughout this research as a distance education (DE) student. Home-schooling, or home-schoolers refers to students who are undertaking schooling at home without the assistance of an institutional schooling context (Burke, 2017).

1.3 SIGNIFICANCE OF THE STUDY

A full treatment of the anticipated contribution of this research can be found in Chapter 5: Discussion and Conclusion, which is summarised below.

1.3.1 METHODOLOGICAL CONTRIBUTION

As identified in *Chapter 2: Literature Review*, a number of authors have identified that K–12 online learning is an open research field and it is anticipated that people with an interest within K–12 online learning will benefit from the findings of this research. Specifically, it is anticipated that this study will contribute to an understanding of Australian senior secondary students' experience of online learning and that this research addresses the gap in the literature about Australian senior secondary online students.

Finally, it is anticipated that this research will make a methodological contribution in providing recommendations on areas for further research into senior secondary students undertaking online learning in Queensland.

1.3.2 CONTRIBUTION TO POLICY

It is anticipated that there will be potential benefits for local school policy and state governing bodies such as the Queensland Curriculum and Assessment Authority (QCAA), Department of Education and Training (DET) and the non-state sector. In particular, Independent Schools Queensland (ISQ) will benefit from the findings of this study.

1.3.3 CONTRIBUTION TO PRACTICE

A review of the literature reveals that there is advancement in published work on K–12 online learning (Kennedy, & Ferdig, 2018), and a scan and review of Australian literature yields very little results in research into K–12 online learning. It is anticipated this research will make a significant contribution to understanding Australian senior secondary student perceptions on the enablers and barriers that senior secondary students experience when they engage in online learning.

It is equally anticipated that local schools, state and private schools of distance education, online teachers, Heads of Departments, Deputy Principals and Principals could benefit by deeper understanding of the students' experience of the enablers and barriers in online learning.

Other potential benefits of the study are that there would be improved understanding about practices that support for online learners and greater understanding of the study environments provided by host schools. Another important benefit would be the identification of what additional support is required to improve student outcomes in online courses.

1.4 RESEARCH AIM

The focus of this study is to investigate student experience of online learning. This research aims to investigate Queensland rural and remote senior secondary student experience regarding enablers and barriers to online learning in order to better understand the student experience of online learning. Specifically, this research explores a group of Queensland rural and remote student perceptions of the enablers and barriers in online: Authority subjects (OP or academic subjects), online Authority Registered subjects (SAS or vocational subjects), and Vocation Educational Training (VETor certificate qualifications) courses.

A review of the literature reveals the need for more research in the area of student voice (Schultz, 2011) and that published work has underrepresented student voice, with much of the focus of the current body of literature from the teachers' point of view (Barbour, McLaren, & Zhang, 2012). While student voice is strongly aligned to the higher education sector (Seale, Gibson, Hayes & Potter, 2015), student voice

research in the K–12 sector has grown over the past two decades. But the focus of much of this research has been from the researcher's or teacher's perspective (Gonzalez et al., 2017). A review of the literature identified several student voice themes as they relate to secondary online students' experience of online learning (see Appendix A). While a number of student voice themes can be identified, the scope of this thesis is limited to three specific areas, communication and socialisation; resources and content; and teacher-student relationship as identified in the Literature Map (see Appendix B).

1.4.1 RESEARCH PROBLEM

This thesis argues that there is a gap in understanding of Queensland senior secondary students' experience of online learning. It demonstrates there is limited understanding of the barriers and enablers perceived by senior secondary students in three online learning dimensions: communication and socialisation; resources and content; and teacher-student relationship.

1.4.2 RESEARCH QUESTIONS

Upon completion of *Chapter 2: Literature Review* the research questions are identified and form the basis for the research. However below is the main question that guided the selection of the literature which provided direction as the broad research problem is informed by a thorough review of the relevant literature.

The main question for the review of the literature:

> What are regional, rural and remote Queensland senior secondary student perceptions of enablers and barriers when undertaking an online course?

1.4.3 LIMITATIONS OF THE STUDY

A full treatment of the limitations of the study and research methodology is undertaken in Chapter 3*:* Methodology. Following is a brief overview of the limitations of this study. This study is limited by the geographical boundaries assigned to the study. Participants are selected from only regional, rural and remote Queensland secondary schools or students from regional, rural and remote locations undertaking secondary education through distance education or home-schooling. Additionally, student participation is limited to include only students in Years 10–12,

with no representation from secondary students studying any form of online learning in Years 7–9. In addition, the study is limited to one academic school year, with phase one qualitative data collection during Semester 1, and phase two data collection undertaken during Semester 2 of the same school year. This study is also limited by the research methodology and the limitations associated with a PhD program.

1.4.4 THE RESEARCHER

The research became important to the author through personal observations made while working in various roles in Queensland schools such as Head of Department for Senior Schooling, Deputy Principal & Head of Department for Distance Education. Some of these observations were made while working with senior secondary students studying in regional, rural and remote schools throughout Queensland. Each school observed was a small secondary school with fewer than 400 student enrolments on campus (Year 7–12). One challenge for the small secondary school is the school is limited in the number of senior subject offerings for the senior secondary students which required the schools to explore other educational opportunities with many of these solutions are online courses.

During this time the author observed firsthand the difficulties and challenges these regional, rural and remote students faced while attempting to engage in online courses, and for most of the students, undertaking online learning for the first time and out of necessity rather than as a chosen learning method. Within each school numerous students expressed negative attitudes towards online learning with some students requesting subject changes out of their online courses or not engaging with their online course, forcing the school to re-enrol them in a less desired subject on campus. In some instances, these changes had a negative impact on the student's Overall Position (OP) attainment or disqualified the student from their university preference as a result of not satisfying prerequisite course requirements. These observations raised many questions for the author that have now become informed and shaped by the literature and which form the basis for this research.

On a more personal note, the researcher observed first-hand the difficulties one of his daughters was experiencing as she transitioned to full time online learning. The

student had previously demonstrated a high level of dedication and diligence in their study resulting in an A average. Further this student also enjoyed the accolades of an academic scholarship and was well known by her teachers as a hardworking and ideal student. While working in a remote Queensland school the researcher decided to enrol the child into a full-time online learning. The student was enrolled in five OP subjects and started studying online Semester One. During the following weeks the researcher watched the student become extremely distressed as they navigated their way through the five online academic courses. Due to challenges like large turnaround times for correspondence and navigating online spaces that were all organised differently, the student lost confidence in their ability to learn, became quite sick and withdrew from online learning and returned to a campus school.

The researcher observing this was surprised that a student who is driven, hardworking and academically could not succeed at online learning. The researcher was working as a Deputy Principal within the state sector at this time and had completed three degree's via online learning. The researcher become motivated to better understand the dynamics involved for a secondary student to successfully engage and complete their online courses. This curiosity was explored formally while the researcher was working for a Distance Education school where the research completed a Masters in Education and led an Action research project around secondary online course development. The researcher has adopted an enquiry approach to investigate other senior secondary student experiences in online learning. Employing an enquiry approach has been chosen to address any negative bias the researcher may have as a result of the aforementioned experiences. Therefore this research is not hampered by these negative observations and this research is an extension of those observations and previous research and provides a platform at a PhD level to further investigate student voice as it relates to online elearning.

1.4.5 SPECIAL NOTE

The following section, Definition of Terms, clarifies the use of terms, and their scope at the time of the study. Some of the terms, and usages apply specifically to the Australian and Queensland educational contexts, but also, during the data collection and time of publication, Queensland was in an important transitional period, from the

old OP system, to the new Senior Assessment Tertiary Entrance (SATE) system. The research was undertaken and concluded prior to the end of the old system, and before the full implementation of the new SATE system. With the two systems in play during the research period, the following definitions were correctly applied at the time of the research and publication. It is important for the reader to consider the terms as they relate to each system, keeping in mind the correctness of the use of terms at the time of publication. Regardless of the transition period, in some ways, the tertiary entrance system is irrelevant to the current study, as it focuses on student voice, with regards to resources and content in online courses; socialisation and communication in online courses; and teacher-student relationships in online courses.

1.4.6 DEFINITION OF TERMS

The following definitions are offered for the specific use within the context of this study. They provide the reader with a common language and understanding of these terms within the scope of this research.

1.4.6.1 K–12 AND F–12

K–12 refers to the sector of education from Kindergarten (K) to Year 12 (12) and is most commonly used by numerous countries as a way of defining this sector of education. K–12 is widely used in United States of America and Canada (Staker & Horn, 2012). In Australia, the term used to describe the same sector of education is Foundation to Year 12 (F–12). The phrase F–12 is consistent with the new Australian Curriculum terminology, as used by the Australian Curriculum Assessment and Reporting Authority (ACARA) curriculum framework, to describe the year levels from Foundation, which was previously known as Prep (the year prior to Year 1), through to Year 12 (Australian Curriculum, Assessment and Reporting Authority, 2014). For the purpose of this thesis both terms are used. When referencing world regions who use K–12 to describe Years Kindergarten to Year 12 the term K–12 is used. Equally when references are made to research undertaken within the fields of K–12 this term is also used. When discussing Australian education, the term F–12 is be used to describe Foundation to Year 12 sector.

1.4.6.2 ONLINE LEARNING

Online learning refers to the use of a virtual curriculum delivery system, and a way of learning where the student can access all their learning resources for a course, module, unit of work, and does not include a face-to-face component (Cavanaugh, Barbour, & Clark, 2009). Online learning is not limited to stationary learning, such as desktop computing, but also encompasses mobile technologies (Gemin & Pape, 2017). Online learning is further discussed in the review of the literature.

1.4.6.3 BLENDED LEARNING

Blended learning can have a number of interpretations. In Canada, the term is synonymous with distance education (Garrison, 2009). This use of the term in Australia is less common and, for the purpose of this research project, is not be used this way. Blended learning refers to a combination of online delivery and some component of face-to-face delivery (Watson, 2008). In the context of this study it is relevant only for participants who are undertaking Vocational Education Training courses that have a practical component, delivered on campus, and linked to an online theory component. For example, the Certificate I in Engineering, where students undertake the theory online and demonstrate their competency in face-to-face lessons.

1.4.6.4 AUTHORITY SUBJECTS

At the time of the research Authority Subjects were subjects that the Queensland Curriculum Assessment Authority (QCAA) has specified as eligible to be counted towards a student's Queensland Certificate of Education (QCE), and which contribute four credits towards the QCE upon successful completion (Queensland Curriculum Assessment Authority, 2017). These subjects counted towards students' Overall Position (OP) and Field Position (FP) scores (Queensland Curriculum Assessment Authority, 2018). Authority Subjects are often informally referred to as academic pathway subjects. Generally, students who chose OP subjects did so in preparation for University or further studies. For the purpose of this study they are referred to as OP subjects.

1.4.6.5 AUTHORITY REGISTERED COURSES

At the time of the research Authority Registered subjects were subjects that the Queensland Curriculum Assessment Authority (QCAA) has specified as subjects that were eligible to be counted towards a student's Queensland Certificate of Education (QCE) and contribute four credits towards the QCE upon successful completion (Queensland Curriculum Assessment Authority, 2017). These subjects did not count towards providing students with an Overall Position (OP) or Field Positions (FP) (Queensland Curriculum Assessment Authority, 2018). Sometimes these subjects were referred to as Subject Area Syllabus (SAS) subjects or, in Queensland schools, vocational pathway subjects. Generally speaking, students chose SAS subjects in preparation for the workforce, or for vocational qualifications after secondary education. For the purpose of this study Authority Registered Subjects are referred to as SAS subjects.

1.4.6.6 VOCATIONAL EDUCATIONAL TRAINING COURSES

Vocational Education Training (VET) subjects are qualifications earned under the Australian Qualifications Framework (AQF) (AQF Council, 2013). VET qualifications can include range of different levels such as Certificate I, II, III or IV (including school-based traineeships), with the majority of qualifications being offered in schools at a Certificate II level (Department of Education and Training, 2017). VET qualifications, upon successful completion, are accredited to a student's QCE. Each qualification has different weightings, and some restrictions apply to how many Level I courses can contribute to the QCE (Department of Education and Training, 2017). VET subjects can come from a range of training packages, and can be taken on campus with the school acting as the Registered Training Organisation (RTO), or through an external provider acting as the RTO, or a school-based traineeship or apprenticeship. For the purpose of this study these subjects are referred to as VET subjects.

1.4.6.7 SENIOR EDUCATION TRAINING PLAN (SETP)

A Senior Education Training Plan (SETP) is a partnership document between the student, school and home, designed to assist the student in a process to plan their

final secondary education and transition to further studies or employment (Department of Education, 2017). It is commonly referred to in Queensland State Schools as a SETP. A SETP is drafted during Year 10, as a part of the senior phase of learning, and a part of the compulsory participation phase (Education [Queensland Curriculum and Assessment Authority] Act 2014). It is a career plan that specifies career pursuit, as well as identifying the subjects a student undertakes in Years 11 and 12, to work towards their career goals. For the purpose of this study the Senior Educational Training Plan is referred to as the SETP.

1.4.6.8 HOME SCHOOLING

Home schooling refers to students whose education occurs at home with the student's parent or guardian as the main educator (Pannone & Panone, 2017). In Queensland, home schoolers register with the Department of Education and Training (DET) Home Education Unit (HEU), or enrol with a state, or non-state, distance education provider. For the purpose of this research home schooling refers to the families and students who educate their children from their home environment and who have registered through the HEU. Student participants who are home schooled undertake full-time study loads.

1.4.6.9 DISTANCE EDUCATION

Distance Education, often referred to as DE, is a generic term widely used to define the distance education field (Bozkurt et al., 2015). For the purpose of this study distance education refers to either: students who are enrolled in a traditional face-to-face context that are accessing at least one online course via distance to complete their SETP requirements, or students who are home-schooled and enrolled with a state, or non-state, distance education provider. Distance education students are provided with all curriculum materials, and teacher support, and most of their learning materials are accessed via a Learning Management System (LMS) (Ko & Rossen, 2017). Distance or location are irrelevant for the purpose of this study, distance education refers to a student learning online.

1.5 LIST OF ABBREVIATIONS

Education, like many disciplines, uses a large number of abbreviations. This thesis, in the first instance uses the full name of the organisation, authority or curriculum descriptor, however after the first use of the full definition the abbreviation of the same is used. To assist the reader a full list of abbreviations has been provided (see Appendix C).

1.6 OVERVIEW OF THE THESIS

This chapter has provided a brief overview of the research, outlining the focus and significance of the study. It has also identified the research aim, and the research questions. Finally, it has provided a brief overview of the limitations and scope of the research, and defined the key terms as they relate to the research.

Chapter 2: Literature Review, provides a comprehensive review of the current literature related to this topic as identified in the literature map (Appendix B). The literature review addresses the main areas of the research:

1. The Australian (and Queensland) educational context
2. Educational technologies
3. Online learning
4. Blended learning
5. Student voice
    a. Resources and content
    b. Socialisation and communication
    c. Teacher/student relationship

Chapter 3: Methodology, describes the research methodology selected (see Appendix D), describes the survey instruments (see Appendix F and G), data collection methodology and data analysis procedures (see Appendix E) used in this study. *Chapter 4: Results,* describes, in detail, the data analysis procedures, identifies and discusses the key findings of the research as they relate to the current body of literature, and addresses the key questions of the research. *Chapter 5: Discussion and Conclusion*, presents an in-depth discussion of the findings, and a review of the

problem. It identifies the potential benefits of the research and provides recommendations for further research.

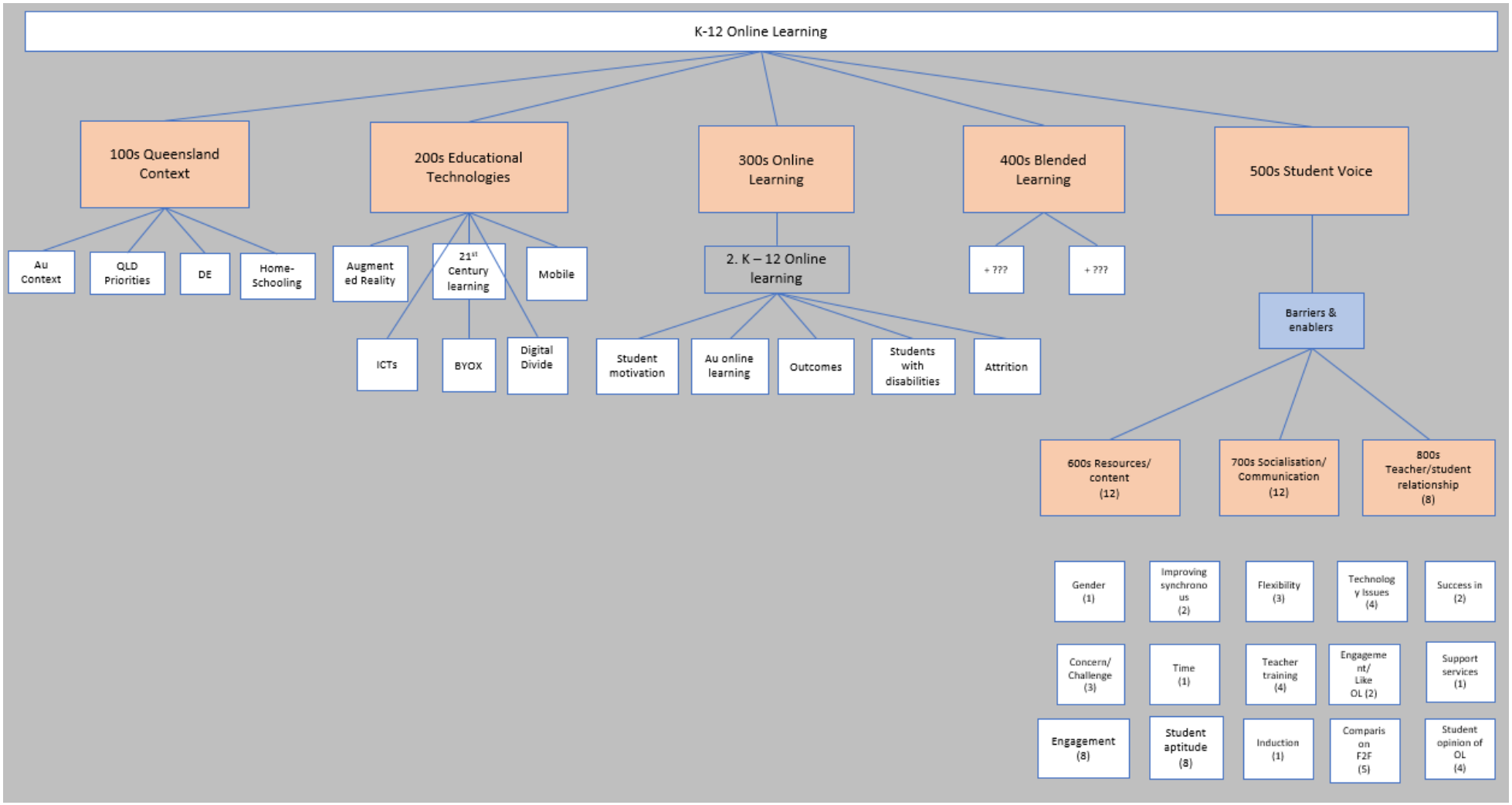
CHAPTER TWO: LITERATURE REVIEW

2.1 OVERVIEW

This literature review provides the theoretical framework for a study of senior secondary students' perceptions of enablers and barriers in online learning, as outlined in the Literature Map and the Conceptual Framework (see Appendix A).

Literature for this study was canvassed from two main sources, firstly from selected education journals (see Table 1), and secondly from Australian and Queensland, state and non-state, secondary schooling education authorities. Additional literature related to the Vocational Education and Training (VET) sector is also included in this review. VET literature was identified as relevant because Queensland senior secondary students can access national qualifications, under the Australian Qualifications Framework (AQF), as a part of their senior learning.

The most frequent themes related to student voice were: communication and socialisation; resources and content; teacher-student relationship; student aptitude/skill and student engagement. The less frequent student-voice themes (i.e. topics represented in five or fewer articles) are not included in this discussion.


K-12 Online Learning
100s Queensland Context
200s Educational Technologies
300s Online Learning
400s Blended Learning
500s Student Voice
Au Context
QLD Priorities
DE
Home-Schooling
Augmented Reality
21st Century learning
Mobile
2. K – 12 Online learning
+ ???
+ ???
Barriers & enablers
ICTs
BYOX
Digital Divide
Student motivation
Au online learning
Outcomes
Students with disabilities
Attrition
600s Resources/ content (12)
700s Socialisation/ Communication (12)
800s Teacher/student relationship (8)
Gender (1)
Improving synchronous (2)
Flexibility (3)
Technology Issues (4)
Success in (2)
Concern/ Challenge (3)
Time (1)
Teacher training (4)
Engagement/ Like OL (2)
Support services (1)
Engagement (8)
Student aptitude (8)
Induction (1)
Comparison F2F (5)
Student opinion of OL (4)

The remaining five themes were reviewed to identify the three most pertinent to the current study. Three themes: teacher-student relationship, student aptitude/skill, and student engagement, were equally represented in the literature, but due to the limitations of the study, and reflection upon the author's vocational work as a K–12 Online School Manager, the themes student aptitude/skill and student engagement were excluded, leaving the three main themes: communication & socialisation, resources & content, and teacher-student relationship, as the focus of this study (see Appendix A and B).

Table 2
Keyword Search Terms and Phrases

Keyword
K–12 online learning
F–12 online learning
Secondary online learning
Senior secondary online learning
Queensland secondary online learning
Queensland senior secondary online learning

While overlap has been identified between K–12 education and the Higher Education sector on student voice (Seale, Gibson, Hayes & Potter, 2015), literature related to Higher Education online learning was excluded from the search using keyword phrases as shown in Table 2. However, because Queensland Senior Secondary students can participate in Level Three courses or higher, such as Certificate III level, or Early Entry university courses, as a part of their senior secondary education, some higher education studies were referenced for this study.

This review begins by providing an overview of the Australian education landscape, including a discussion of distance education, and a brief discussion on home schooling in Australia. Subsequent sections address the topics of online learning and blended learning and the chapter concludes with a discussion of student voice (see Appendix B).

The literature review examines the following subjects.

1. The Australian (and Queensland) educational context
2. Educational technologies
3. Online learning

4. Blended learning
5. Student voice
    a. Resources and content
    b. Socialisation and communication
    c. Teacher/student relationship

2.2 THE AUSTRALIAN EDUCATION LANDSCAPE

The following two main sections of the literature review provides a thorough overview of the Australian Education landscape and the Queensland Education Landscape. The national and state education legislation, policy, and initiatives provides the educational background at the time of the study. Pertinent sections of this review is referenced in *Chapter 5: Discussion and Conclusion*.

2.2.1 NATIONAL OVERVIEW

The following section discusses the key national education legislation, policy and the Federal Government education initiates.

2.2.1.1 AUSTRALIAN EDUCATION ACT AND AUSTRALIAN EDUCATION REGULATION

The ultimate responsibility for the education of Australian citizens rests with the Australian government (Australian Constitution Act 1977). Under the Australian Education Act 2013 each state and territory is obligated to engage young people between the ages of six and sixteen in education unless the child is exempt from compulsory schooling (DET, 2018). The Australian Education Act 2013 applies to both state and non-state schooling in Australia and is the basis of each state and territory education system. In Queensland the Education (General Provisions) Act 2006 governs provision. In recent years there has been a united effort nationally to achieve the outcomes of the Australian Education Act through the establishment of the Council of Australian Governments (COAG) which one of their functions is Education. COAG produces key guiding policies for Australian Education, such as the Melbourne Declaration.

2.2.1.2 THE MELBOURNE DECLARATION

The most significant national policy on Australian education over the past decade is the *Melbourne Declaration on Educational Goals for Young Australians*, commonly referred to as The Melbourne Declaration, which states national goals for education within Australian (Barr et al., 2008). The Melbourne Declaration supersedes the two previous national goal declarations, the Adelaide Declaration by the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA, 1999) and the Hobart Declaration (Council, 1989). The 1989 Hobart Declaration became the National Goals for Schooling in Australia (Braithwaite, 1994). The Melbourne Declaration, published by MCEETYA in 2008, has been the premier guiding document for Australian Education Minsters in recent years. The declaration identifies two educational goals for young Australians to be achieved over a period of a decade. The first is that "Australian schooling promotes equity and excellence," and the second that "All Australians become successful learners, confident and creative individuals and active and informed citizens." These are the main focus for the policy (MCEETYA, 2008). In response to The Melbourne Declaration, the Victorian Government, in partnership with the Council of Australian Governments (COAG), developed a four-year plan 2009–2012 (MCEETYA, 2009) in the subsequent year. The four-year plan was an accepted companion document which outlined in more detail the Melbourne Declaration goals and was endorsed by Education Minsters in March 2009 as a part of a regulatory reform (Carroll & Head, 2010). This detailed plan focused on an additional eight national strategies designed to achieve the goals of the Melbourne Declaration as shown in Table 3.

Alongside the Melbourne Declaration and MCEETYA's four-year plan stands the COAG National Education Agreement which declares the commitment of each state and territory to The Melbourne Declaration and MCEETYA's four-year plan

Table 3
MCEETYA Commitment to National Strategies for Action

Strategy
Developing stronger partnerships
Supporting quality teaching and school leadership
Strengthening early childhood education
Enhancing middle years development
Supporting senior years of schooling and youth transitions
Promoting world-class curriculum and assessment

(Council of Australian Governments, 2009). Months after National Education Agreement, The Ministerial Council for Education, Early Childhood Development and Youth Affairs (MCEECDYA) was established to oversee progress towards the Melbourne Declaration goals (National Report on Schooling in Australia, 2009). These documents provide a common framework of nationally agreed goals, outcomes, strategic targets and key performance indicators for the Australian Government to deliver education.

2.2.1.3 AUSTRALIAN EDUCATION GEOGRAPHY

Australia boasts a land mass of 7.7 million square kilometres with a population of just over 24 700 000 people sprawled across this large island continent (Australian Bureau of Statistics, 2017). The majority of this area is identified as very remote with the main populations in coastal areas in major cities, inner regional centres and outer regional centres (Australian Bureau of Statistics, 2011) as shown in Figure 1. This sparse landscape requires a robust governance model to deliver national educational goals to all Australians. The following section outlines the key educational governance responsibilities in Australian state and non-state schooling.

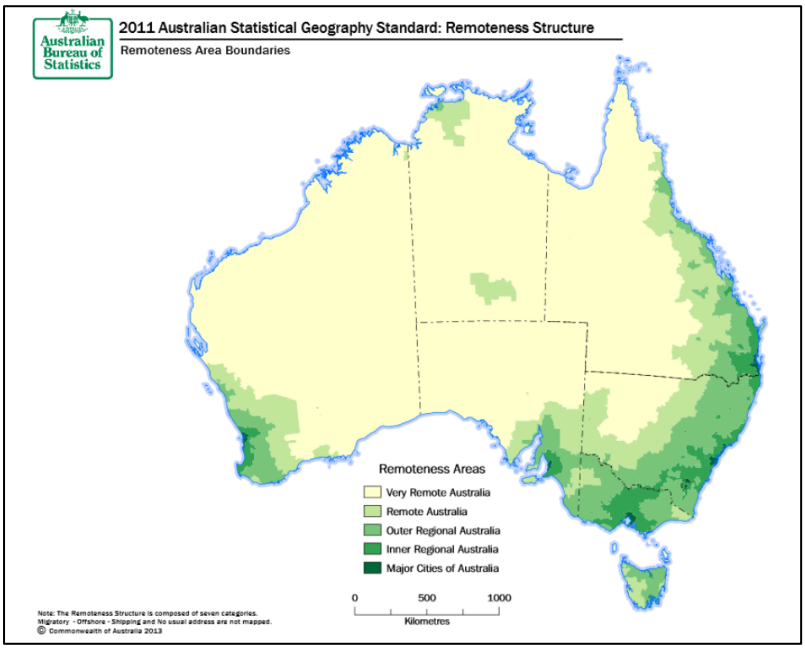


Figure 1. Remoteness Structure Map of Australia (Australian Bureau of Statistics, 2011).

2.2.1.4 SCOPE OF FEDERAL EDUCATION

According to the Australian National Audit Office annual report, the Australian DoE's main responsibility is:

> through the Education Council, and in partnership with the states and territories, developing, progressing and reviewing national objectives and outcomes for schooling and the national curriculum; and administering the Australian Education legislative framework (including the Act and the Regulation) and relevant agreements. (Australian National Audit Office, 2018, p. 7)

The following provides a snapshot of the national education performance and the Federal Government initiatives to respond to the declining national performance. Pertinent to this study, the following section also presents federal initiatives implemented in regional, rural and remote educational contexts.

2.2.1.5 NATIONAL PERFORMANCE OVERVIEW

The Australian Government relies on a range of internal and external data to deliver evidenced-based educational policy, strategies and services (Australian Government, 2018). Significant internal data sets include the Nationally Consistent Collection of Data on School Students with Disabilities (NCCDSSD); the National Assessment Program (NAP), most commonly known for the National Assessment Program-Literacy and Numeracy (NAPLAN) tests, the results of which are publicly available through the government's school data website, *MySchool*. The NCCDSD collects data for students with disabilities and is used to determine what disability funding schools require for students with learning disabilities. The NCCDSD does not report on student achievement like the Annual National Report on Schooling in Australia (DoE, 2018a), rather it provides important statistical information related to students with learning disabilities in all schools. It has also been noted in the literature that students with disabilities is an area that is underrepresented in research (Harvey, Greer, Basham & Hu, 2014).

A key report on Australian education is the Annual National Report on Schooling in Australia (ANR) which is informed by the Measurement Framework for Schooling in Australia published by the Australian Curriculum Assessment and Reporting

Authority (ACARA, 2015b). The ANR annually reports on progress towards the educational goals as set out in The Melbourne Declaration, in line with the key national key performance measures agreed by all Australian education ministers (ACARA, 2015c).

The most accepted external data, used at a macro level to measure the education performance of Australian students, is the Programme for International Student Assessment (PISA), which can be used to gain a deeper understanding of Australian education performance in relation to other Organisation for Economic Cooperation and Development (OECD) countries (Gonski et al., 2018). Australian student performance, including PISA results, is discussed in Analysis of Performance below, and provides an overview of national educational statistics as an important backdrop for discussion on Australian student performance in 2015.

2.2.1.5.1 STATISTICAL BACKGROUND

In 2015 there were over 3.7 million full-time students in over 9400 schools, as shown in Figure 2 (Australian Government Productivity Commission, 2017), with the majority, 71% of students, enrolled in government schools (ACARA, 2015). During the year there was no notable growth within the non-state-school sector (ISCA, 2015) and a high number of young people identified as not completing Year 12, or equivalent, during 2015 (Lamb, Jackson, Walstab, & Huo, 2015). In 2015, all states and territories offered the same length, thirteen years, of formal education with schooling typically beginning at the age of five (Australian Curriculum Assessment Authority, 2015). Sixty-five per cent of students enrolled were full time with the largest enrolment numbers in the state of New South Wales and the smallest enrolment representation in Northern Territory schools (Australian Bureau of Statistics, 2015).

The national attendance average for Years 1–10 was just over 92% (ACARA, 2015). However, Aboriginal and Torres Strait Islander students' attendance rates were reported lower than the national attendance rate, at only 83%, and comprised 6.9% of state school enrolments, and only 2.4% of non-state school enrolments (Australian Government Productivity Commission, 2017). The non-state school sector reported

only 3.3% of students with disabilities (ISCA, 2015) while state schools reported 19.4% of students with disabilities (Education Council, 2016).

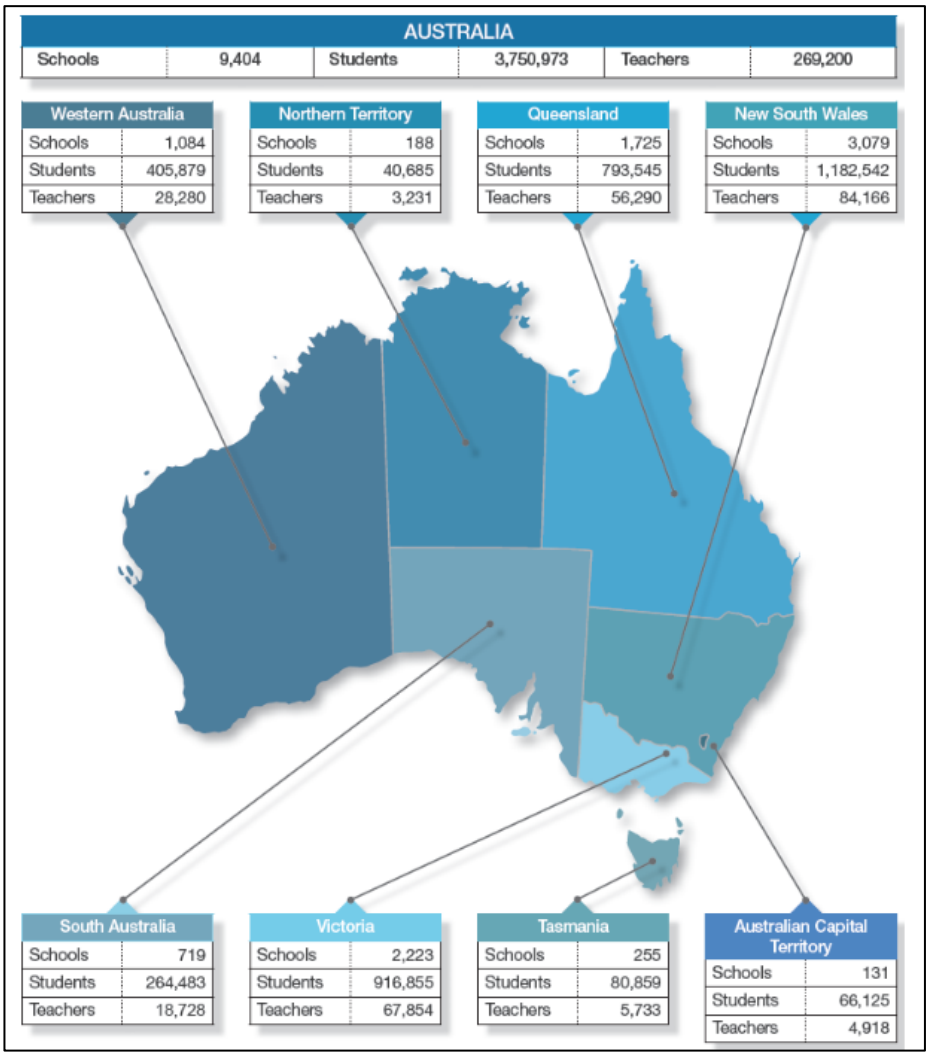


Figure 2. The Number of Schools by State and Territory (Australian Bureau of Statistics, Cat. No. 4221.0 *Schools, Australia*, 2015)

In 2015 schools were funded by a combination of state/territory government funds, federal funds, fees and charges and private contributions such as parental contributions (ACARA, 2015). A total of $53 billion was invested by the Australian Government through states and territories on education in 2015, with $40.3 billion invested in government schooling (Australian Government Productivity Commission, 2017). The non-state schooling sector received 40% of their funds from state and federal governments, reporting an estimated saving of $4.2 billion to the government thorough its sector (ISCA, 2015). Non-state schooling received 31% of their funding through federal contributions, 11% through state contributions and the remaining 58% through community and parent contributions (2015).

2.2.1.5.2 ANALYSIS OF PERFORMANCE

For a thorough analysis of Australian student achievement performance data should be analysed from both internal and external sources. The following snapshot of Australian student achievement is based on student performance results from the internal NAPLAN report and external PISA results. Schools are required to annually engage their Year 3, 5, 7 and 9 students in NAPLAN to provide a national snapshot of student performance. PISA results provide a comparative snapshot of Australian student performance and many schools regularly engage in these tests to better understand student progression (Thomson, De Bortoli, & Underwood, 2017). We begin with an analysis of NAPLAN results for the academic year 2015.

2.2.1.5.3 NATIONAL ASSESSMENT PROGRAM LITERACY AND NUMERACY (NAPLAN)

The National Assessment Program (NAP) is managed by ACARA which administers a number of national tests, the most widely known being the NAPLAN test. The National Assessment Program was first introduced to Australian schools in 2008 and replaced tests previously administered by states and territories (Lingard, 2010). As the Queensland Curriculum Assessment Authority (QCAA) points out, NAPLAN measures how Australian Years 3, 5, 7 and 9 students perform in numeracy, reading, writing, spelling, punctuation and grammar using a point-in-time test (Queensland Studies Authority, 2013). While NAPLAN is a mandatory national assessment tool, families can request for their children to be withdrawn from the test, and some students are automatically exempt from participation (National Assessment Program, 2018). In 2015, participation rates for NAPLAN for reading, writing, and literacy were over 90% for all participating year levels (Australian Curriculum Assessment Authority, 2015). The number of students achieving at or above the minimum standard in NAPLAN was also 90%. Queensland reported improvement across eighteen of the twenty testing areas since its inaugural test in 2008 (QCAA, 2015b).

At the time of writing NAPLAN testing was in a transitional phase with schools trailing online NAPLAN testing (Lowrie & Logan, 2013). While concerns were expressed by the Australian Education Union (AEU) about the technical capacity of Australian schools to deliver online testing in a point-in-time test (AEU, 2017a), the

NAPLAN online trial has demonstrated that not only can it deliver an online test, but also that online delivery has the capacity to provide a tailored test that can adapt to different ability groups (Lowrie & Logan, 2013). NAPLAN online testing has also been identified by some as an advancement in Australian education and an important contributor to evidenced-based knowledge about teaching and learning through digital technologies (White, 2014). However, NAPLAN has its critics who suggest this high-stakes testing is based on a narrow single-indicator philosophy and that Australia should consider other evidence of student achievement (Klenowski & Wyatt-Smith, 2012). NAPLAN results are not necessarily an indicator of the best performing students in Australia (Gross, 2015) and further criticism pointed to the amount of time and attention national testing, such as NAPLAN, is receiving in Australian Schools. Torii and O'Connell (2017) advocate that schools should focus on the skills required for life after school.

2.2.1.5.4 PROGRAMME FOR INTERNATIONAL STUDENT ASSESSMENT (PISA)

While benchmark testing has its critics over its relevance (Morsy, Khavenson & Carnoy, 2018) tests such as the PISA test can be used as a tool by schools for school-improvement (Thomson, De Bortoli & Underwood, 2017). PISA is an international assessment which is designed to measure 15-year-old student achievement in mathematical, reading and scientific literacy and is an initiative of the OECD. In one study into student and school performance in the PISA tests, Australia was identified as the second largest participating country, behind Canada, with more than double the number of students participating, compared to the United States of America (USA) (Masci, Johnes & Agasisti, 2018) which must be considered when endeavouring to make international comparisons.

When analysing PISA data for school and student performance, other factors such as class size, students' well-being, and the educational expenses involved contribute to country outcomes (Witkowska, Witkowski & Goczek, 2018). Australia has been identified internationally as having a relatively high expenditure on education (OECD, 2016), which yields positive results with Australian students performing significantly higher, in 2015, in mathematical literacy, reading literacy and science literacy than the OECD average (Thomson, De Bortoli & Underwood, 2017).

Australian students were ranked at a Level 3, Proficient Standard. It has been suggested that these results can be useful to measure Australia's progress towards to the goals of the Melbourne Declaration (Thomas, et al., 2017). However, Gonski et al. (2018) compared Australia's performance over time and identified that Australia has been progressively losing its global ranking since 2000, which raises questions for policy makers about what it will take to reverse this trend (Masters & Geoff, 2014). This long-term decline compared to the world's most improved school systems, the fact that Australia's listing from its Asia-Pacific neighbours is absent confirms the observation by Gonski et al. that Australia is losing its international ranking (Mourshed, Chijioke & Barber, 2010).

A more in-depth analysis of PISA results is required to identify contributing factors such as school size, student absences and disadvantaged students (Masci, Johnes & Agasisti, 2018), as well as a deeper understanding of how Australian students were ranked above average in a cross-national comparison whilst reporting such high rates of non-completion (Lamb, Jackson, Walstab, & Huo, 2015). This supports the concerns of misuse of PISA results raised by Choi and Jerrim (2016) and requires further investigation which is beyond the scope of this study. This overview of Australian student performance in national standardised testing and international testing provides background for a discussion of the national educational strategies used by the government to improve student performance.

2.2.1.6 NATIONAL EDUCATION STRATEGIES

The focus now shifts to the current national strategies, identifying several important strategies and significant organisations in the delivery of education to Australian students.

2.2.1.6.1 AUSTRALIAN QUALIFICATIONS FRAMEWORK (AQF)

The Australian Qualifications Framework (AQF) is the overarching framework for all qualifications within Australia (AQF Council, 2011). The framework includes Level One courses which correspond to Certificate I courses, through to Level Ten, which represent post-graduate doctorate level courses. International Baccalaureate courses are equivalent to the Diploma, Level 5 courses in the AQF (Kidson,

Odhiambo & Wilson, 2018). Queensland senior secondary students are able to undertake AQF courses ranging across five of the ten qualifications levels. Senior secondary students in Queensland regularly engage in Certificate I, Certificate II, Certificate III levels and, in some instances, Diploma level courses and receive credit from the QCAA towards their Queensland Certificate of Education (QCE) upon successful completion (Li, 2011).

Certificate courses are available as either full or partial qualifications and can be accessed by students in face-to-face, blended, or online mode, or as a part of a school-based traineeship or apprenticeship, the majority of students being in Years 11 and 12 (Klatt, Clarke & Dulfer, 2017). Queensland students in Year 10 can also access these courses and many Queensland schools provide them as preparatory courses. The student may earn the full Certificate I qualification in Year 10 and complete a higher, related qualification in Years 11 and 12, as a part of their Senior Education Training Plan (SETP). QCE points begin accruing prior to Year 11 (Harreveld & Singh, 2009).

Students who complete a Certificate III, an AQF Level 3 course, have a qualification that surpasses the Queensland Certificate of Education. Level 2 and Level 3 Certificate qualifications have varying weights attributed to them by the QCAA depending on the level of difficulty of the course. Some Certificate III courses are deemed trade-level courses which cannot be completed as a part of the student's SETP but only via post-secondary education (QCAA, 2018). The most common course taken during a student's senior phase of learning is the AQF Level 2 course, a Certificate II (QCAA, 2016).

The government has implemented a number of key strategies designed to achieve the goal that every secondary student will gain a Year 12 certificate or equivalent AQF qualification. The key strategies are outlined below.

2.2.1.6.2 QUALITY SCHOOLS PACKAGE

The Quality Schools Package is a commitment to produce a high-quality schooling system through significant increases in school funding (Joseph, 2017). The Quality Schools Package is a result of the school improvement funding review, initiated in

2010 by the then Federal Minister for Education, the Hon Julia Gillard MP, who initiated the review to develop a funding model that would provide a transparent and fair funding solution for Australian Schools (Gonski et al., 2011). This comprehensive review incorporated important concerns such as: disadvantaged students (Rorris, et al., 2011), indigeneity (Kenway, 2013), remoteness (Guenther & Bat, 2013), low socio-economic status (Gonski et al., 2011), students with disabilities (Harrington, 2013), funding equity issues for students studying by distance education (Harding, 2012), and concerns identified by the independent schooling sector (National Catholic Education Commission, 2011).

The report became well known in Australia and was most frequently referred to as the Gonski review or Gonski report. It was used to head the AEU's campaign *I Give A Gonski* (IEU, 2017b), and was the subject of much scrutiny (Joseph, 2017, Manwaring, Gray, & Orchard, (2015). The Liberal-National Coalition government has since passed a new funding model, dubbed Gonski 2.0, which has triggered a new debate on the Gonski funding model (Zadkovich, 2017).

The new funding model, the Quality Schools Package is based on the Schooling Resource Standard which is a needs-based model that provides extra loading for schools for students with disabilities, low English language proficiency, Aboriginal and Torres Strait Islander students, socio-educational disadvantage, school location and school size loadings (Department of Education and Training, 2018). The new model has been identified as disadvantaging the Catholic education sector (Australian Broadcasting Commission, 2018) and some high-fee independent schools, such as the Kings School in North Parramatta, will receive a total funding increase of over $19 million, even though the school already charges $34 323 a year per senior student (Sydney Morning Herald, 2018). The challenge of implementing an equitable model for school funding is not isolated to Australia (Angioloni, Wu & Sherry, 2018) and will continue to be vital for the future as Australia seeks to remain competitive in global markets (Department of Treasury, 2016).

2.2.1.6.3 TEACHING AND LEARNING INITIATIVES

The federal DET, identified several key strategies to improve teaching and learning in Australian schools (see Table 4). These are reflected in the National School

Improvement Tool and are the main domains for school improvement (Australian Council for Educational Research, 2012). They focus on school leadership, curriculum development, community and parent engagement, student well-being, Aboriginal and Torres Strait Islander students and students with disability concerns. Additionally, DET have included strategies to transition young people from secondary education into further training or employment, which is imperative for the future economic well-being of Australia (Deloitte, 2016).

Table 4
Key 2018 DET Education Initiatives

Initiative	Focus
Teaching and School Leadership	The influence of the teacher and school leaders
National Curriculum	A national curriculum for all Australian students
Parent engagement	The role of parents, families and carers in a child's education.
Student Well-being	Student resilience and well-being
Indigenous Education	Closing the gap for Aboriginal and Torres Strait Islander children
Students with Disabilities (SWD's)	Supporting the rights of children and young people with disability.
School to Work Transitions	Supporting young people to continue their education and training post year 12

(Department of Education and Training, 2016).

2.2.1.6.3.1 EDUCATIONAL RESEARCH

While DET does not promote its research priorities or research agenda, it is involved in national education studies. Between 1985 and 2016, DET cooperatively funded, with state and territory governments, a range of research projects focused on national youth affairs (DoE, 2018b). It is also committed to an ongoing longitudinal study into 15 to 25 year olds and how students transition into adulthood including employment and further study experiences of young people (DET 2018a) and continues to invest into educational research through funding the Australian Council for Education Research and the National Centre for Vocational Education Research for Vocational Education and Training (ACARA, 2016).

2.2.1.6.3.2 VOCATIONAL EDUCATION AND TRAINING (VET)

In Australia, Vocational Education Training (VET) is a nationally recognised training programme available to secondary students aged 15 or older (typically Year 10–12 students) and to adults (Council, 2016). VET is coordinated by the Council of Australian Governments Industry & Skills Council (ACARA, 2015). VET

qualifications include AQF Level One qualifications, Certificate I, through to Level Four qualifications, Certificate IV (AQF, 2013). Thirty two per cent of Australian young people successfully completed a unit of competency or a full qualification in 2015 (ACARA, 2015) and more than 90% of Australian schools offer VET subjects (Council, 2016), including school-based traineeships and school-based apprenticeships (ACARA, 2015), with a total of over 30 million subject enrolments (National Centre for Vocational Education Research, 2016).

VET compliance is regulated by the Australian Skills Quality Authority (ASQA), which monitors Registered Training Organisations (RTOs) according to Standards for Registered Training Organisations (ASQA, 2017). In Queensland, the QCAA is the delegated authority for ASQA for all Queensland state and non-state schools and registers and audits Queensland RTOs (QCAA, 2017a).

In 2015, Queensland boasted the largest number of schools registered as RTOs. There were 298 state and non-state school RTOs compared to Victoria in second place, with 61 registered school RTOs (NCVER, 2016). These statistics highlight the importance of including VET in the current research, given its significant role, especially for Queensland secondary students.

The addition of VET in Queensland schools provides students with a wider range of senior schooling flexibility, offering students access to national qualifications, and the opportunity to begin apprenticeships and traineeships during their senior phase of learning (QCAA, 2017b). While there are regional variations in VET activity in Australia (Walstab & Lamb, 2008), reliable secondary school VET information can be obtained from state and territory authorities, such as the QCAA or Queensland DoE.

While VET has been identified as a key national strategy by the Australian Government, VET strategies have been published sporadically (Keating, 2008) and have undergone twenty-three reforms since January 2014 (Australian Government, 2018b). The recent VET reforms have focused on industry responsiveness, quality and regulation, funding, and governance as well as data and consumer information including VET for disadvantaged students (Lamb et al., 2018). These reforms are in

response to criticisms of the funding cutbacks to the Australian VET sector and are an important step in upskilling Australia's workforce for the future (Council, 2014).

2.2.1.7 SIGNIFICANT AUSTRALIAN EDUCATION ORGANISATIONS

In addition to state and territory education departments, DET is supported by a number of other significant organisations such as the Education Council and The Australian Institute for Teaching and School Leadership (AITSL). The Education Council is a council of COAG and provides a forum for strategic policy for education whereas AITSL is the peak national body to support new teachers, develop teachers, and assist teachers to develop leadership, as well as supporting teachers wanting to migrate to Australia.

Education Services Australia (ESA) is another significant Australian Education organisation. ESA is a not-for-profit organisation authorised by state, territory and Australian Government ministers and provides a number of services to Australian services with *Scootle* and *myfuture* two of their best-known initiatives. ESA also provides digital solutions for schools, educational content and supports other initiatives such as the NAP and NCCDSSD. The Australian Council for Educational Research (ACER) creates and promotes research-based services, products and knowledge to support Australian schooling. Their services include diagnostic testing, professional learning, publications for all schools sectors and higher education.

The Australian Curriculum and Assessment Reporting Authority (ACARA) is the nation's curriculum authority and is responsible for the development of a national curriculum for Australia under the auspices of COAG. In 2007, COAG highlighted the economic importance of a national curriculum and included education as a part of their productivity agenda to facilitate developing a national curriculum (Council of Australian Governments, 2007). To provide relevant information to all Australians on schooling in Australia ACARA established the portal *My School* which is a resource for community members, parents and educators to find information on Australian Schools. As ACARA is an independent statutory authority, collecting and reporting data on schools, it updates data in *My School* annually.

2.2.1.8 REGIONAL, RURAL AND REMOTE EDUCATION

Regional, rural and remote schools are schools which are outside of all Australian major cities, and are categorised as Inner Regional, Outer Regional, Remote and Very Remote (Halsey, 2018). They account for 47% of all schools in Australian and have received increasing attention from the Australian Government, with the recent announcement of $152 million Regional Student Access to Education package (Pollard, 2017). Delivering educational outcomes to regional, rural and remote communities is not only important to Australia's prosperity (Tieken, 2014), but also, projected growth outside of Australia's major cities is estimated to reach 26% between 2007 and 2026 (Capeness, 2015). This makes rural, regional and remote education profoundly important for the sustainability of regional Australia (Halsey, Drummond, & van Breda, 2010). Delivering education to regional, rural and remote students presents challenges and opportunities.

2.2.1.8.1 REGIONAL, RURAL AND REMOTE EDUCATION CHALLENGES

Historically rural students are often understood to be disadvantaged (Franklin, 2010) with some rural students perceiving a lack of ability to compete with their urban peers (Stevens, 2010). In a recent independent review into Australian regional, rural and remote education, this student perception is potentially confirmed by a gap in educational achievement between students in regional, rural and remote communities and their metropolitan peers (Halsey, 2018).

Research has identified a number of factors that are a challenge for remote education: school attendance (Watson et al., 2016), education policy (Reid, 2017), isolation (Guymer, 1975), teacher training and support (Trinidad & Broadley, 2010), teacher access to professional development (Broadley, 2010), high staff turnover rates (Shaw, 2010), and context of the local community (Watson et al., 2016). It has further been identified that this disadvantaged status also negatively impacts Aboriginal and Torres Strait Islander students with many remote students having limited access to secondary education (Crawford & Schwab, 2017). Support for culture also needs to be considered for the success of Aboriginal and Torres Strait Islander students (Halsey, 2018).

2.2.1.8.2 REGIONAL, RURAL AND REMOTE EDUCATION OPPORTUNITIES

While regional, rural and remote education has some challenges, Stevens (2010) advocates that this perceived disadvantage should be viewed as opportunity, as rural communities build on relationships through e-learning, e-government and other e-services. Research has identified opportunities for remote communities through advancements in the use of educational technologies. Web-based literacy programs in the Northern Territory allowed students to improve literacy results using a web-based reading tool (Wolgemuth et al., 2011). In another national project social computing was used to enhance learning opportunities and reduce the isolation of remote students and blogging was identified as an opportunity for rural students (Reading, 2009).

Trinidad (2009) found similar results to Reading's national case study in her Western Australian study. Social computing was found to be a very powerful tool for learners where computers were used to connect geographically dispersed groups. More recently, researchers found opportunities for remote Torres Strait Islander students, in which online learning can assist access to education for communities that are experiencing challenges such as a lack of qualified teachers in their rural community (Mulcahy, Barbour & Lahiri, 2016).

The government has demonstrated its commitment to online engagement by setting a target date of 2020 for four out of every five Australians to engage with the government through online services (Freeman, 2012). The key to advancing regional, rural and remote education will be the ability of the government to provide high-speed broadband to regional, rural and remote locations (Shaw, 2010).

2.2.1.8.3 REGIONAL RURAL AND REMOTE FURTHER RESEARCH OPPORTUNITIES

Educational research into regional, rural and remote contexts over the past decade has largely focused on teacher preparation and transitioning to higher education (Bradley, 2008). Pini and Mayes (2015) suggest that there needs to be a shift in research direction to consider other factors such as culture and oral history, to provide a more accurate understanding of Australian rurality. In particular, we need

to use this understanding to improve rural education systems (Kline, Soejatminah, & Walker-Gibbs, 2014). There needs to be an explicit focus on Aboriginal and Torres Strait Islander education (Roberts & Cuervo, 2015) and further research into the aspirations and expectations of Indigenous communities and their students (Crawford & Schwab, 2017).

As identified earlier, sporadic research efforts into Australian secondary online learning and, in particular, Queensland secondary students, have labelled Australian secondary schools' virtual learning journey as "first generation" (Kapitzke & Pendergast, 2005). Jebeile and Reeve (2003) recommend further research into students' perspective of eLearning and identification of barriers and enablers of distance education students using a flexible mode or blended learning model (Lucey, 2014) which the present study addresses.

2.3 THE QUEENSLAND EDUCATION LANDSCAPE

Each state and territory are required to deliver a national curriculum each state and territory has its own educational improvement agenda and organisational structure. The followings section discusses the Queensland Education Landscape in the state Catholic and independent education sectors.

2.3.1 STATE SCHOOL SECTOR

The state sector is the largest of the three sectors in Queensland and has its own structure under the governance of the Department of Education (DoE).

2.3.1.1 GOVERNANCE

Queensland education priorities mirror national education goals. The recently renamed Queensland Department of Education (DoE), formally The Department of Education and Training (DET), also frequently referred to as Education Queensland (EQ) since 2000 ("A Chronology of Name Changes", 2018), has the responsibility of educational oversight for Queensland state education. DoE's service delivery includes Early Childhood Education and Care, School Education and Training Skills services but, due to the scope of the current study, only information related to secondary schooling is discussed below.

2.3.1.2 EDUCATION QUEENSLAND STATISTICS

State schooling is managed across Queensland through seven regions, as listed in Table 5 (Schools, 2018). DET reported 534,426 full-time-equivalent enrolments, an increase of over 9000 from the previous year, at an average cost per student of $14,000 and, for students with disabilities, an average of $29,000 per student. Queensland state schooling reported growth in 18 of the 20 NAPLAN test areas since its baseline data was reported. They also reported improved Queensland Certificate of Education (QCE) and Queensland Certificate of Individual Achievement (QCIA) results and an increase in the Certificate II (+) attainment and completion rates of Aboriginal and Torres Strait Islander students. Positive parent satisfaction was reported, with 94.1% of parents indicating they were satisfied by the child's state school (DET, 2017).

Table 5
Department of Education and Training Regions

Region	Number of schools	FTE Enrolments
Far North Queensland (FNQ)	97	35 670
North Queensland (NQ)	109	33 030
Central Queensland (CQ)	189	46 730
Darling Downs South West (DDSW)	207	42 449
North Coast (NC)	220	116 965
South East (SE)	167	120 762
Metropolitan (M)	251	156 906

(Schools, 2018)

2.3.1.3 STATE SCHOOL STRATEGY

The Queensland DoE has identified a number of key priorities for state education, which are listed in Table 6.

Table 6
Key State School Initiatives

Initiative	Focus
Advancing Skills for Future	Queensland Government's vision for VET. Focuses on three priority areas for action: industry and innovation; a quality system; access and participation.
State School Strategy	Every student succeeding strategy is Queensland's plan to lift the performance of each state school student, teacher and principal.
Advancing Education	Advancing education is an action plan for Queensland education that will see us take our world-class education system further and prepare our students for the challenges of tomorrow.
Inclusive Education	A focus on every day, in every classroom, every state school student is learning and achieving in a safe, supportive, inclusive and disciplined learning environment.
Indigenous Education	Ensuring every Aboriginal and Torres Strait Islander student in Queensland is afforded the opportunity to achieve success.

Investing for Success	Providing State schools with continuity for school improvement initiatives and upholds the guarantee, made in 2016, to continue to match 2015 funds (Great Results Guaranteed), irrespective of enrolment fluctuations.
Disability	Ensuring all students have access to high quality learning opportunities, focused on their individual needs, is a priority for Queensland state schools.
Health and Wellbeing	A focus on schools engaging with students, staff, parents and carers, and their communities to: support students' health and wellbeing; build a positive learning culture; improve educational outcomes of students.
Behaviour	That all state schools in Queensland be safe, supportive and disciplined environments, where students can learn and achieve.
Curriculum	The Australian Curriculum, Assessment and Reporting Authority (ACARA) develops the Australian Curriculum with input from leading educators in Queensland.
Teaching	Improving teaching quality with a focus on improving student achievement with the assistance of The Australian Professional Standards for Teachers (AITSL).
School Community	A focus developing productive partnerships with students, staff, parents and their communities to: support improved student learning opportunities; deliver high achievement; promote community confidence and pride in the school's ability to meet the needs of all students and enhance performance.
School Capacity	Providing strong school leadership and instructional leadership to improve learning outcomes and build a culture of ongoing improvement across Queensland.
School Operations	A range of policies to support school operations such as Flexible Learning Arrangements (FLA's), student absences and Chaplaincy.
Smart Classrooms	A strategy that is student-centric; recognising the demand, from both students and their parents, for seamless movement between learning at school, home, work and play.
Education Queensland Research Priorities	Identified priority research themes to maximise benefits to the government by research focused on education and training, including research undertaken within schools or other departmental locations.

("Schools and Educators" 2018)

These priorities reflect the national educational directives, as identified in the *Education (General Provisions) Act 2006* (Department of the Premier Cabinet, 2014), the Melbourne Declaration, as well as the federal government's Quality Schools initiative (Australian Government, 2016). The Queensland Government DoE key initiatives are driven by the commitment that all Australian students have the right to access a high-quality education (DET, 2016).

Of special interest to this study is the Queensland DoE and Training Research Priorities, summarised in Table 7. The research priorities identified by DoE drive the research agenda for state education and facilitate research partnerships between the department, individual researcher, and university partnerships. DoE invests in targeted areas to ensure that it has high quality research to guide the state education agenda continues to prioritise initiatives that are evidenced-based (DoE, 2018b).

The research grants offered by DoE must align to the department's research priorities and are competitive research grants designed to advance state education in Queensland.

Table 7
Department of Education Priority Research Themes

Initiative	Focus
Learning in the 21st Century	To identify the opportunities and impacts of technological and cultural change on learning methods and pedagogies
Empowered Learners	Building on knowledge and provide evidence of activities and methods which will improve learners' outcomes and experience.
The Diverse Learner	Research that facilitates better outcomes for learners of all backgrounds and abilities with a special focus on Aboriginal and Torres Strait Islander Queenslanders.
Leadership Expertise and Support	Research on how staff leadership and educator expertise can best be supported.
Community Connections and Integration	Research that provides evidence to build on understanding of the complex relationships between learning centres, learners, parents, and the broader community, including universities, business and industry.
Health and well-being	Research that supports the health and well-being of all staff and learners.
Transitions Pathways and Lifelong Learning	Research that informs effective transition strategies at a systemic and local level and helps deliver positive outcomes for learners.
Pedagogy, Curriculum and Assessment	Research into what is important to know and how best to learn, teach and assess through evidence-based practices that enable positive outcomes for students.

While the current research is not funded by the department, a brief overview of these priority areas reveals that three of the research priorities: Learning in the 21st Century, Empowered Learners, and The Diverse Learner are intrinsically related to the focus of this study, highlighting the relevance of this study to the advancement of Queensland education. The first theme, Learning in the 21st Century, is addressed in this study by investigating how Queensland state and non-state schools are using technology to deliver education to regional, rural and remote students through online modes.

The second theme, Empowered Learners, is relevant to this study with its focus on student voice and, in particular, the student's perceptions and attitudes towards resources and content, socialisation and communication, and the teacher-student relationship when engaging in online learning. The DoE research priority area The Diverse Learner is relevant to this study, which identifies the needs of students with

learning disabilities when engaging in online learning. The DoE research priority into students with disabilities focuses on supporting an inclusive approach that understands the individual needs of each learner (Department of Education & Training, 2019). Finally, while the focus of the study is not Aboriginal and Torres Strait Islander students, it is anticipated that the online survey and follow-up focus group sessions capture their voice. Further research areas related to Aboriginal and Torres Strait Islander students undertaking online learning is identified in the final section of this chapter.

2.3.2 NON-STATE SCHOOL SECTOR

Non-state schools are required to be registered with the Non-State Schools Accreditation Board (NSSAB) under the Education (Accreditation of Non-State Schools) Act 2017. The largest non-state school bodies are ISQ and the Queensland Catholic Education Commission (QCEC). The independent education sector represents up to 20% of students in Queensland (Timms, Graham & Cottrell, 2007) and dates back to Australian settlement with Rev Richard Johnson teaching students in his church (Parker, Gane & Parker, 2015).

Table 8

State and Non-State School Educational Priorities Comparison

State School Educational Priorities Queensland Education Department (QED)		Independent Schools Queensland (ISQ) Educational priorities		Queensland Catholic Education Commission (QCEC)	
Initiative	Focus	Initiative	Focus		
Advancing Skills for Future	VET sector				General information
State School Strategy	Performance of each student, teacher and principal.	Strategic planning and improvement	Resources and programs for continuous improvement		
Advancing Education	Queensland education action plan	2018–2020 Strategic Plan	Biannual strategic plan	2018–2020 Strategic Plan	Biannual strategic plan
Inclusive Education	A safe, supportive, inclusive and disciplined learning environment.	Addressed in Student wellbeing initiative		Inclusive Practices in Catholic Schools	General information

Table 8 Cont.

State and Non-State School Educational Priorities Comparison

State School Educational Priorities Queensland Education Department (QED)		Independent Schools Queensland (ISQ) Educational priorities		Queensland Catholic Education Commission (QCEC)	
Investing for Success	Providing State schools with continuity for school improvement initiatives	Funding	Range of government funded program activities	Group Funding Guidelines 2018–2023	Information on funding
Disability	Ensuring all students have access to high quality learning.	Students with disabilities	Learning activities with reasonable adjustments		
Initiative	Focus	Initiative	Focus		
Health and Wellbeing	A focus students' health and wellbeing.	Student support	Focus on supporting wellbeing	Student Wellbeing	Focus on supporting wellbeing
Behaviour	Safe, supportive and disciplined environments.				
Curriculum	The Australian Curriculum, Assessment and Reporting Authority (ACARA) input from leading educators in Queensland.	Australia Curriculum (AC)	Supporting teachers to deliver AC	Curriculum, Assessment & reporting	Supporting teachers to deliver AC
Teaching	Improving teaching quality with the assistance of The Australian Professional Standards for Teachers.	Great teachers in Independent Schools	Resources and programs to build teacher capacity		
School Community	A focus developing productive partnerships.			Partnerships with Parents	A focus developing productive partnerships.
School Capacity	Providing strong school leadership and instructional leadership.	Teaching and Learning Academy & Self-improving Schools	Tailored leadership programs. & Evidence based strategies	Teacher Capability Program	

Table 8 Cont.

State and Non-State School Educational Priorities Comparison

State School Educational Priorities Queensland Education Department (QED)		Independent Schools Queensland (ISQ) Educational priorities		Queensland Catholic Education Commission (QCEC)	
School Operations	A range of policies to support school operations.	Governance Services &School Business & administration	Effective governance within schools & Services and advice to meet regulatory and legislative requirements	Maintenance of facilities in Queensland Catholic Schools	
Smart Classrooms	A strategy that is student-centric.			Information and Communication Technologies Position Statement	
Education Queensland Research Priorities	Identified priority research themes.				
Rural and Remote Education	Various initiatives			Catholic Education in Rural and Remote Areas in Queensland	Information on rural and remote locations

In recent years there has been much debate about state and non-state schooling with concerns expressed over a culture of shopping for a school (Campbell, Proctor & Sherington, 2009), market position advantages (Boyne, 2002), inequity of funding models (Harding, 2012), income inequality in accessing private education (Glomm & Ravikumar, 1992), perceived quality of local school options (Murnane & Reardon, 2018), significant challenges for indigenous students accessing private education (Heyeres et al., 2018), and cognitive and non-cognitive developmental impact from school type (Nghiem, 2015). Regardless of concerns over non-state schooling, Queensland families have the choice to send their children to an independent school. When investigating the educational priorities of the independent sector, given the increased accountabilities of education (Cranston et al., 2010), it is not surprising

that an analysis of the educational priorities for the non-state sector (see Table 8) is very similar to the state sector.

While the sole responsibility of education has historically rested with state and territory governments, the past decade has seen an increased interest and involvement of the federal government, with initiatives and polices which have been the catalyst for national testing and enhanced accountabilities (Cranston et al., 2010). Increased accountability for student outcomes has been strengthened through NAPLAN, open data sources such as *My School* website, and the publication of annual reports from DoE, ISQ and QCEC. This has increased publicly available information on independent school performance and improved accountability for the independent sector (ISQ, 2018). It is in their best interest to be actively working towards state and federal educational priorities like their state counterparts.

2.3.2.1 NON-STATE SCHOOLS GOVERNANCE

The main bodies responsible for non-state schools in Queensland are ISQ, the Queensland Catholic Education Commission (QCEC) and the Queensland Government, Non-State Schools Accreditation Board (NSSAB). The 304 Catholic schools in Queensland are governed by QCEC through 22 Catholic School Authorities which fall under one of five dioceses in Queensland (Catholic Schools Authority, 2018).

ISQ offers membership to all non-state schools in Queensland and provides a range of support services such as: advocacy and representation, school business and administration, school growth support, strategic planning assistance and professional development opportunities (ISQ, 2017a). ISQ also partners with its federal counterpart Independent Schools Council of Australia (ISCA).

The accreditation of all non-state schools is managed by NSSAB, who provide registration for non-state schools and conduct audits to ensure compliance with the Education (Accreditation of Non-State Schools) Act 2017 and the Education (Accreditation of Non-State Schools) Regulations 2017.

2.3.2.2 NON-STATE SCHOOLS STATISTICS

In 2015, ISQ had a membership of 149 schools comprising 15% of Queensland school enrolments, and nearly 20% of secondary school enrolments (ISQ, 2015). Thirty-four of these schools provided boarding and 74 schools had overseas students enrolled in them, 164 offered prep, 173 were coeducational and, of special interest to this research, 5 provided distance education.

2.3.2.3 NON-STATE SCHOOLS STRATEGY

The comparison in Table 8 shows that state education has more educational priority areas and the two non-state school sectors have strategic priority gaps. The absence of some key strategies in the independent sector might be due to the authority structure, where behaviour management, or VET activity, for example, are managed at the local school level. ISQ provides consultation and specialist services in compliance but does not mandate educational initiatives for members (ISQ, 2017b). Comparing state, ISQ and QCEC priority agendas in Table 8, there is overwhelming agreement.

Furthermore, while some initiatives for ISQ and QCEC are not explicitly stated, they can be identified under similar headings, for example, ISQ's school community priority. State education has an explicit School Community strategy which focuses on developing productive relationships, whereas ISQ, while not publishing such a strategy, promotes this educational priority to its member schools. Another important example is Behaviour Management. State education has targeted behaviour management as a priority area while both non-state school sectors have a specified initiative, which is most likely because each school makes local decisions about the behaviour management philosophy that the school will employ.

Of particular interest to the current research is the absence of blended learning and online learning as strategies, which is puzzling given the priority that online learning is gaining internationally. In the USA, five states have made it mandatory for all students to complete at least one online course as a part of formal secondary education (National Conference of State Legislatures, 2018).

2.3.3 QUEENSLAND CURRICULUM ASSESSMENT AUTHORITY

The delegated authority for curriculum assessment and reporting for both the state sector and the non-state sector is the Queensland Curriculum Assessment Authority (QCAA). In addition to the curriculum support the QCAA provides to both sectors, the QCAA also certifies students at the end of Year 12. Below presents the QCAA's involvement with curriculum, reporting and certification and a historic change to Queensland senior curriculum, external assessment and, a new to Queensland, university ranking system is explained.

2.3.3.1 QUEENSLAND CURRICULUM

The QCAA acts as proxy for ACARA for Queensland curriculum oversight (Carter, Klenowski & Chalmers, 2016). It offers services and resources for the implementation of the QCAA syllabuses, which are designed to achieve the outcomes of the national curriculum that all Queensland schools are required to deliver to their students. These syllabi are also referred to as the Australian Curriculum in Queensland (ACIQ) (Ross, 2017).

In addition to achieving ACARA and ACIQ curriculum outcomes, non-state schools can embed their particular world view throughout the curriculum, based on their beliefs or values (Dao, 2017). However, the QCAA has final authority over curriculum plans such as the senior phase of learning (Dyson, Plunkett, & McCluskey, 2018). With the introduction of the Queensland Certificate of Education (QCE) and external assessment in Queensland, the QCAA acts also as the chief authority for transitioning Queensland schools from the old Overall Position (OP) system into the new, externally assessed, Australian Tertiary Admission Rank (ATAR) system (Willis, McGraw & Graham, 2017).

2.3.3.2 QUEENSLAND CERTIFICATE OF EDUCATION AND QUEENSLAND TERTIARY ADMISSIONS CENTRE

The current Queensland Certificate of Education (QCE), was introduced in Queensland after a review into the senior certification process, as a way to increase the number of young people completing Year 12 with a certificate (Pitman, 2002). Under the current QCE system, students who successfully complete a full-time study

load during Years 11 and 12, and who meet the prerequisites of the QCE, are awarded a QCE at the end of Year 12 (QCAA, 2017a). Students who undertake an academic pathway during their senior phase of learning and meet with prerequisites of an Overall Position (OP), or who apply through a rank process (Day & Dlugosz, 2001), have their results submitted to the Queensland Tertiary Admissions Centre (QTAC) for tertiary entrance offers (Kelly, 2014). A fuller treatment of the QCE and its close relationship to tertiary entrance is presented below under the Senior Assessment Tertiary Entrance Scheme (SATE) and Australian Tertiary Admission Rank (ATAR) subheading.

2.3.3.3 QUEENSLAND CERTIFICATE INDIVIDUAL ACHIEVEMENT

Some students in Queensland who have a learning disability are required to be given additional education support (Ruddock, 2005). Often these students are unable to meet the requirements of the QCE system and choose to earn a Queensland Certificate of Individual Achievement (QCIA) (QCAA, 2017c). The QCIA is an individualised learning pathway, where the student's achievements are recognised through the award of the QCIA (Matters & Masters, 2014). The QCIA has specific goals for the individual student in curriculum assessment and reporting, as set out in the Guideline for Individual Learning (QCAA, 2015c). The new QCE makes no changes to the QCIA except by the introduction of quality assurance processes (QCAA, 2018a).

2.3.3.4 SENIOR ASSESSMENT TERTIARY ENTRANCE SCHEME AND AUSTRALIAN TERTIARY ADMISSION RANK

This study is undertaken during a significant transition period in the senior phase of learning for Queensland students with the re-introduction of external assessments for the first time in Queensland since the 1970s (Maxwell & Cumming, 2011). In 2014 the Australian Council for Education Research submitted a review of senior assessment and tertiary entrance to the Queensland Government with twenty recommendations for senior assessment including the replacement of the Overall Position (OP) system with the new to Queensland, Australian Tertiary Admissions Rank (ATAR) (Matters & Masters, 2014).

Student participants in this study come from both the old and new systems. Students studying Year 10 in 2018 were a part of the new QCE system and student participants studying Years 11 or 12 in 2018 were a part of the old OP system, which was phased out in 2019. Both systems are now discussed, beginning with a brief overview of the old system.

2.3.3.5 THE OLD OP SYSTEM

Until the current review into senior assessment and tertiary entrance, Queensland has had four main reviews, the Radford Report, the ROSBA Report, the Pitman Report, and the Viviani Report, which provided direction for Queensland education for approximately 25 years (Kelly, 2014).

The first two reviews, known as the Radford and ROSBA reviews, introduced the Tertiary Entrance (TE) score which was required for higher education acceptance. The original QCE was a moderated, school-based assessment model, and Radford's recommendations to the DoE analysed the pros and cons of a school-based system (Radford, 1970). The Review of School-Based Assessment (ROSBA), later the same decade, introduced thirty-six policy changes and sixty machinery recommendations, and reported that internal assessments were working and public acceptance growing (Scott, 1978).

The next two reports, known as the Pitman review and the Viviani review, began the Queensland OP system. The Pitman review explored ways in which the government could increase the number of young people completing Year 12, focussing on Year 10 as the beginning of the senior phase, and introducing senior certificates that were issued at the completion of the senior phase of education (Pitman, 2002). During the 1990s the Viviani review and the Wiltshire review added Vocational Education and Training options to the curriculum (Maxwell & Cumming, 2011) and introduced the senior assessment tertiary entrance system, most commonly known as the OP System (Matters & Masters, 2015).

The QCE system was managed by the Queensland Studies Authority, which changed its name in 2014 to the QCAA (Jetnikoff, 2014). The QCAA's main function was to

approve work programs, assist schools across the state with the monitoring of Year 11 assessments, verify Year 12 assessments, and provide Queensland Tertiary Admissions Centre (QTAC) exit results of eligible Year 12 graduates with Overall Positions (OPs), Field Positions (FPs), and Queensland Core skills (QCS) test results, for university placement offers (Matters, 2015).

2.3.3.6 THE NEW ATAR SYSTEM AND QCE

The reform history of the QCE began with a review into the effectiveness of the school-based assessment model (Matters, 2015) and what has been criticised as an antiquated system for tertiary entrance (Education [Overseas Students]) Bill 2018 (Cth)). This review was led by the Queensland Government working collaboratively with the Australian Council for Educational Research in a review of Queensland's secondary-tertiary process. The 2014 report to the Queensland Minster for Education recommended a complete overhaul of the Queensland secondary-tertiary entrance process (Matters & Masters, 2014). This review resulted in the government's final position on the new senior assessment and tertiary entrance scheme which introduced external assessment to Queensland for Year 12 students and shifted from the old OP system to the Australian Tertiary Admission Rank (ATAR). The responsibility for the determination of a Year 12 tertiary entrance rank moved from the QCAA to QTAC (DET, 2017b).

These changes to the Queensland senior phase of learning will provide students with wider study options and see the reintroduced of external assessment (QCAA, 2017d). The new QCE has implications for all Year 10 students in 2018 as they select their subjects for Years 11 & 12 and as they prepared for senior external assessment the first time in forty-eight years (Maxwell & Cumming, 2011). The QCAA is responsible for phasing in the new QCE between 2017 – 2020 (see Figure 3).

The ATAR system is still new in Queensland and there are already legitimate concerns about its relevance and why Queensland should use it when 60% of 2017 undergraduate university offers were made outside of the ATAR system (Pilcher & Torii, 2018). Their data needs to be considered in context, as they include all university offers and not just university offers for secondary students. There are advantages to the new system, as Queensland senior schooling will be brought into

alignment with the rest of the nation and it will strengthen Queensland's tertiary entrance system (Matters & Masters, 2014).

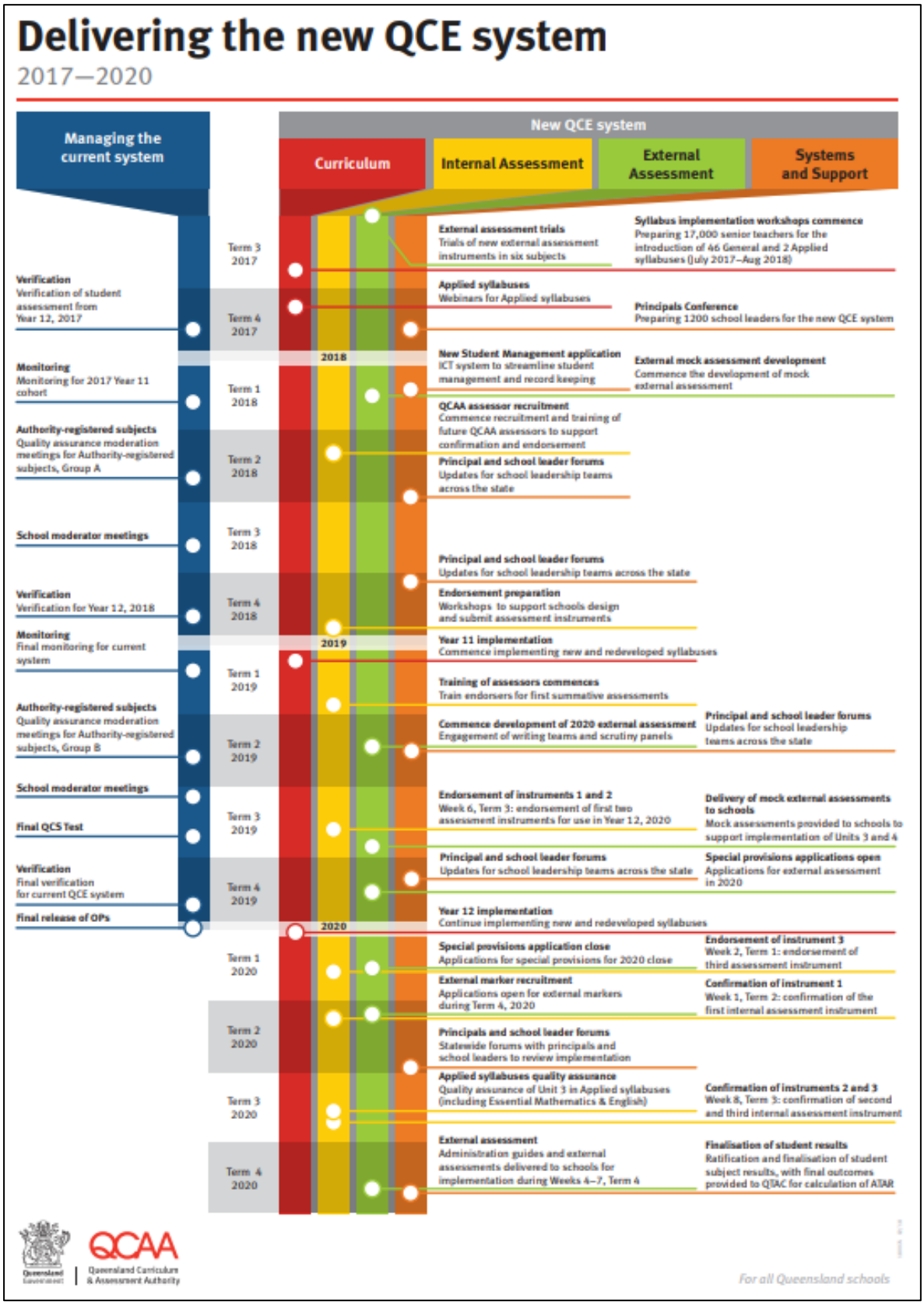


Figure 3. QCAA Delivery timeline for the new QCE (QCAA, 2018)

2.3.4 QUEENSLAND COLLEGE OF TEACHERS

A final body relevant to the current study is the Queensland College of Teachers (QCoT) which manages the registration of Queensland teachers (Ambrosetti, Capeness, Kriewaldt, & Rorrison, 2018). In addition to their involvement in registering teachers, QCoT also promotes and supports the Australian Institute for Teaching and School Leadership (AITSL) Professional Standards for Teachers (Dann, Dann & O'Neill, 2018). All teachers regardless of education sector are required to hold and maintain registration with QCoT through an annual registration process. Of interest to the current research is that the AITSL standards do not include any reference to blended, or online delivery (AITSL, 2014) which is an area for further development as Queensland continues to shift its thinking towards blended and online modes of delivery (QCAA, 2017e).

2.3.5 DISTANCE EDUCATION

Similar to the three educational sectors discussed above, Queensland has three sectors which provide distance education, the state sector being the largest provider, the independent sector, representing the second largest service and the Catholic sector which provides limited distance education services.

2.3.5.1 QUEENSLAND DISTANCE EDUCATION OVERVIEW

Australia, as the seventh largest country in the world by area, with a population of over 23 million in 2016, at a density of only 3.14 residents per square kilometre, compared to the UK which had 267.28 people per square kilometre in 2016 (Central Intelligence Agency, 2018). With a little over 16 million Australian residents in greater capital cities in 2016 (Australian Bureau of Statistics, 2017), this presents an enormous challenge to provide education to the remaining 8 million people who reside in the rest of this vast country.

Queensland, representing 22.5% of the mainland area of Australia (Geoscience Australia, 2018), is the second largest state in the country emphasising the challenges of educating Queenslanders. The Queensland government is responsible for the education of the students who live in some of the world’s most remote locations

(Crump, 2013) and has achieved this through several significant phases during Queensland's 167–year history (Mills & McGregor, 2016).

There are several important developments in distance education within Queensland, with four main periods identified in Table 9. The first development began at a national level during the penal colony era, with the establishment of the first school in Australia in 1826 under the governance of Rev. Richard Johnson. Rev. Johnson was the First Fleet's Chaplain (Parker et al., 2015) and was assigned to educate the convicts and later over 100 children in his church (Symonds, 1898). It was then the accepted view that education was the responsibility of the church (DoE, 2018c). This view prevailed until 1842, when Governor Fitzroy appointed a Board of National Education whose main role was to establish and administer government schools (DoE, 2018).

Table 9
Major Historic Periods for Queensland Education

Era	Focus
1826–1860	Penal colony to Board of General Education
	The Board of General Education
1860–1875	Grammar School era
	Origins of Technical Education
	The Department of Public Instruction
	Development of State Secondary Schooling
1875–1957	Development of Special Education
	Development of Technical Education
	The Department of Education
	Expansion of Secondary Education
	Development of Special Education
1957–1982	Technical Education

The next significant era in the development of Queensland education began with the establishment of the state Education Act of 1860 (Logan, & Clark, 1984). At the beginning of this fifteen-year span of education history Queensland was declared a separate colony from New South Wales (NSW) and the Queensland needed to address the educational needs of the developing nation. A new board was established, who managed education budgets, had oversight of curriculum, training of pupil teachers and expansion of provisional schools in Queensland. The Act facilitated important developments in educational policy such as compulsory age of education, the secularisation of education, free primary education and the introduction of a Department of Public Instruction (Logan & Clark, 1984).

With the updated Act of 1875, Queensland transitioned to The Department of Education, which established 680 more schools by 1900 (DoE, 2018d). Queensland curriculum philosophy undertook a major shift to focus on the child, rather than the teacher, and for content to be adjusted to the particular geographic needs of the local community, for example, the introduction of Rural Studies at Nambour State School.

A significant challenge of this era was the attempt to solve the problem of distance in a large state. The department initiated the Itinerant Teacher Scheme (O'Donoghue, 2000). Itinerant teachers would visit families up to three times a year to provide schooling for distance students. Victoria was the first state to implement correspondence education at the secondary level in 1914 and Queensland shortly followed suit, which caused Australia to be recognised as the first country to deliver education via correspondence on a large scale in a systematic way (Stacey & Visser, 2005). The Australian Postal Service was used to deliver print material to students and the government established The Primary Correspondence School in 1922 (Houldsworth, 2012).

During the 1960s and 1970s the department delivered education to regional, rural and remote students using High Frequency (HF) radio (Riethmuller, 1996). During these lessons students would interact with the teachers and other students through the use of the two way radio. Other significant developments during this time included the replacement of the 1875 Education Act with the State Education Act 1964 and extensive syllabus overhauls (Logan, 1981). During 1973 and 1974 additional Commonwealth funds were released for the delivery of education to geographically isolated students as a part of the policy of equality of education opportunity (Logan & Clark, 1984).

The next major development in the delivery of curriculum to regional, rural and remote students was with the introduction of the Internet. While the first Australians made connection to the Internet in the early 1990's (Lance, 1998), it was not until 2000 that the Internet was used by The Virtual Schooling Service to deliver curriculum to regional, rural and remote students who had access to the Internet

(Stacey & Visser, 2005). This was a game-changer for the delivery of curriculum to regional, rural and remote locations that had reliable access to the Internet, ushering in the beginning of the digital age (Hastie, 2016). The introduction of the Internet began to challenge traditional notions of distance education (Stevens, 1994) and has resulted in schools of distance education leveraging technology's capacity to deliver curriculum across Queensland, using a wide range of digital pedagogies such as real time, synchronous teaching and learning (Hastie, 2016). The following section discusses distance education in Queensland.

2.3.6 QUEENSLAND DISTANCE EDUCATION PROVIDERS

In Queensland students can access state and non-state distance education school programs from a small offering of schools (see Table 10). Non-state schools of distance education in Queensland have a relatively short history. The first two distance education schools registered with NASSAB in 2001, highlighting how young the non-state schools of distance education are in comparison to state schools.

Table 10
Queensland Schools of Distance Education

State Schools of Distance Education	Non-State Schools of Distance Education
State Schools of Distance Education	Non-State Schools of Distance Education
Brisbane School of Distance Education	Riverside Christian College – established prior to 2001 (Non-denominational)
Cairns School of Distance Education	Jubilee Christian College – established prior to 2001 (Non-denominational)
Capricornia (Rockhampton Campus) School of Distance Education	Groves Christian College – established 2005 (Non-denominational)
Capricornia (Emerald Campus) School of Distance Education	Australian Christian College Morton – established 2008 (Non-denominational)
Charleville School of Distance Education	Faith Christian School – established 2012 (Non-denominational)
Longreach School of Distance Education	Redwood College – established 2015 (Non-denominational)
Mount Isa School of the Air	Central Queensland Christian College – established 2015 (Non-denominational)
	Angelorum College – established 2016 (Roman Catholic)
	Charlotte Mason College – established 2017 (Certificate qualifications only)

(NSSAB Secretariat, personal communication, April 30, 2018)

2.3.6.1 DISTANCE EDUCATION TERMINOLOGY

There is variation in the use of the terms distance education and blended learning. Some world regions use the term distance education, others now use blended learning to describe learning that is taking place via distance education and

sometimes blended learning is a synonym for distance learning (Staker, 2014). In Australia, the term distance education describes students studying at distance from the provider. The first official use of the term blended learning, as a mode of curriculum delivery for Queensland schools, is in a QCAA report about senior schooling timetable options (QCAA, 2017d). The QCAA distinguishes the term, *blended learning* from *distance education*, encouraging evidence that Queensland is beginning to make progress in its understanding of blended learning and online learning. The current research anticipates contributing to this developing field in Queensland.

The Australian Education Act 2013 and the Australian Education Regulation 2013 although using the term distance education, provides no definitive definition of distance education, blended learning or online learning, yet it references distance education schools and distance education students (Australian Government, 2017). However, the federal government provides the following as a definition of distance learning for international students, which makes a clear distinction between distance learning and online learning:

> Distance learning is study in which the teacher and overseas student are separated in time or space throughout the duration of the unit of study. Distance learning differs from online learning in that the study may be undertaken through written correspondence and exchange of hard copy materials.
> ("National Code Part D, Standard 9", 2018).

This definition is limited in its application as this definition relates to international enrolments and there is a clear delineation made in this explanatory guide. It is inconsistent with the international use of the language by leading organisations such as Educause (Hodges et al., 2020).

A further definition for distance education (with no reference to blended learning or online learning) can be found in the recently updated Queensland Education (Accreditation of Non-State Schools) Regulation 2017 where the following definition is supplied for distance education (as it applies to distance education schools):

> ...distance education school means a school that uses the distance education mode of delivery of education (p. x8).

No further definition is provided in the Queensland Education (General Provisions) Regulation, 2017, which references distance education only in the context of providing legislative guidance regarding fees (Education (General Provisions) Regulation, 2017). These examples of the use of the term distance education highlight the need for more relevant definitions current with international trends. Key terms such as distance education, blended learning and online learning is clarified by the current study.

2.3.6.2 OVERVIEW OF AUSTRALIAN DISTANCE EDUCATION LITERATURE

International research reports a number of positive aspects of distance education: positive and motivating student experiences (Garrison, 2009; Miller, 2011), a higher level of course relatedness and course interest (Koseoglu & Doering, 2011), increased course satisfaction (Stewart, Harlow, & DeBacco, 2011), and numerous opportunities through the use of technology (Eynon, 2009).

Australian literature on distance education revealed similar positive benefits including DE students frequently being ahead of their peers (Ryan, Scott and Walsh, 2011) and more socially well-adjusted (Miller, 2011) and better parent and student relationships (Harding, 2011). Researchers concluded that distance education was a respectable option for education (Shacher & Neumann, 2010).

The New South Wales Department of Education discussion paper, "A Vision for Distance Learning for the 21st Century", reported that the advantage of distance education is its capacity to adapt in response to rapid changes in delivery methodologies (NSW Education Department, 2011).

Challenging aspects of distance education have also been identified. One of the concerns in the Australian F–12 distance education sector is that teachers' use of technology in distance education is ad hoc, due to a lack of frameworks for technology integration (DET, 2011). Students' intrinsic and extrinsic motivators were identified as an issue for DE students (Harnett, George, & Dron, 2011). Other

challenges related to distance learning are identified in the Blended Learning and Online Learning sections below.

2.3.6.3 AUSTRALIAN HOME-SCHOOLING

Home-schooling is a legal option for Australian families who chose to home-educate their children. They are required to submit an application and curriculum planning to the Department of Education Home Education Unit (Jackson & Allan, 2017). While home-schooling is identified as a viable option for families to educate their children (Belfield & Levin, 2015), the literature presents a strong contrast between supporters of home schooling and its opponents, and home-schooling is consequently identified as controversial (Medlin, 2013). While much of the literature is from the USA, Australian literature reflects the same dichotomy Home-schooling would easily require a substantial literature review in its own right, so a brief overview only is given here, as some of the participants in the current research come from this minority group.

One concern expressed about home-schooling is a lack of governance over what students are learning (Reich, 2016). McCulloch, Sloan, Kolegue, and Montando (2006) reported little public oversight of home-schooling families and that these families have unfettered authority over curriculum. Harding (2011) expressed no such concern and pointed out that over the past 30 years Australia has experienced a steady growth in the home-schooling movement.

McCulloch et al. displayed religious bias by reporting on a specific religious group, which did not have a direct link to their conclusions regarding the lack of public sector oversight of home-schoolers. West (2009) expressed concerns that home-schooling once had been a remnant, but now due to the current explosion in home and online schooling, home-schooling is beginning to gain a stronger footing. West does not provide any quantitative data to support this view. Jackson (2008) does provide quantitative data and demonstrates the growth of the home-schooling movement, since the shift from being prohibited, to becoming legal, in all 50 states of the USA.

In Australia, Harding (2011), in his doctoral research work, reported that over the past 30 years Australia has experienced a steady growth in home-schooling, which has recently been confirmed by Burke (2017) who reported on the sector's rapid growth. Jackson's work on the Australian home-schooling movement highlighted the progress made in last 30 years and interpreted Australia's acceptance of home-schooling in light of progress in the USA. Chapman and O'Donoghue (2000) also reported on the increasing trend in home-schooling in the USA over the last three decades and Varnham (2008) identified the variety of options available to families as interest in this method of learning increases.

Rae (2011) highlighted the important fact that home-schooling is an age-old activity that only a decade ago became a cutting-edge alternative. Varnham, although identifying an increased interest in home-schooling, did not show the same optimistic view as Rae, and expressed his growing concern that "un-schooling" was being added to the home-schooling movement, un-schooling being so highly unstructured as to be detrimental to the reputation of home-schooling (Varnham, 2008). Apple (2008) also expressed concern and noted the need to understand the broader social movements behind the phenomenon of home-schooling but did not expand on any potential threats. However, Medlin (2013) refutes these concerns and points out the strong social skills of students who are home-schooled.

The literature on the home-schooling movement is small but growing (Jackson & Allan, 2017) and in its early stages (Harding, 2011). Australian research is in its infancy and able to draw only limited conclusions (Reich, 2016). Home-schooling in Australia is becoming more accepted as a viable education option (Burke, 2017), all the more so through developments in online technology (West, 2009).

2.4 BLENDED LEARNING AND ONLINE LEARNING

Articulating a definition of blended learning was recently revisited by Hrastinski who reviewed the historical developments of the term and explored several definitions by frequently referenced authors such as Graham (2006) and Garrison & Kanuka (2004), concluding that,

> "the key ingredients of blended learning are face-to-face and online instruction or learning" (Hrastinski, 2019 p. 564)

While the above provides a through definition for blended learning it is important to note that the term "blended learning" has been used synonymously with distance learning (Horn, 2014). Australia has not yet made this distinction and, for the purpose of this study, 'blended learning' is understood as defined above and "distance education' is used to describe students studying at distance from the provider.

Blended learning is identified by some as a sub-category, or a dimension, of online learning (Torrisi-Steele & Drew, 2013). It has the potential to blend face-to-face delivery with the capabilities of online platforms (Dichev, Dicheva, Agre, & Angelova, 2013). Allen, Seaman and Garret (2007) suggested over a decade ago that blended learning held more potential for education than online learning and that it promised as much success as traditional face-to-face and online modalities. At about the same time it was also suggested that online learning could transform learning and that virtual schooling is one of the most important advancements in education in the USA (Powell & Patrick, 2006). These positive declarations of blended and online learning are being realised, with a large uptake in blended learning courses (Horn & Staker 2011). Similarly, online learning has enjoyed rapid growth with K–12 online learning now being practised for about two decades (Barbour, 2013) with 2.7 million students engaging with some sort of online course in the 2013 –14 academic year (Watson, Murin, Vashaw, Gemin, & Rapp, 2013).

These positive developments give support to the growing evidence that United States schools have for some time been including blended learning options into their programs (Watson, 2008). There is much evidence to support Powell & Patrick's earlier projection about the potential impact of blended learning becoming one of the fastest growing trends in education (Dichev, Dicheva, Agre, & Angelova, 2013; Christensen, Horn, & Staker, 2013). The advantages of blended learning and online learning are discussed below.

2.4.1 ADVANTAGES

There is much agreement in the literature about the advantages of K–12 blended and online learning. Researchers have expressed optimism over hybrid delivery, suggesting it could cause a breathtaking transformation within education (Horn & Staker, 2011). Some United States teachers have been taking advantage of blended learning by providing students with a wider range of courses, providing a more individualised instruction and increasing teacher-student interactions (Dichev, Dicheva, Agre, & Angelova, 2013). The addition of face to face instructional opportunities to blended learning is raising expectations of online learning and access to technologies (Means, Toyama, Murphy, & Baki, 2013).

It is reported that students' results improved when they were afforded the opportunity to participate in a blended course (Horn & Staker, 2011) which supports earlier predictions that blended learning would benefit students more than face-to-face outcomes (Smith, 2009; Zhao et al., 2005). Barbour challenges this finding and argues that in some instances the removal of other factors, such as bullying, may be the contributing factor for the improved results, rather than the shift to a blended or online mode of delivery (Barbour, 2014). Comparing online and face-to-face performance, Canadian researchers found that rural, web-based student performance was the same as, or even better than, face-to-face urban counterparts (Barbour & Mulcahy, 2008). Australia researchers concluded that, while students showed a preference for the face-to-face component of the course, introducing the blended model did not affect student results in either a positive or negative way (Kwak, Menezes, & Sherwood, 2015). Barbour's recommendation to look deeper into other factors that may be contributing to improved students results and the findings of Kwak et al. mean further research is required to better understand the effect of contextual factors on student performance (Wright, 2010).

Researchers have suggested that special needs and academic challenges can be catered for through blended and online learning (Rice & Dykman, 2018). A diverse range of students, including students with significant health concerns, are accessing blended and online learning (2018). Blended and online teachers can deliver a personalised curriculum to increase accessibility for students with special learning

needs and have a reliable framework to ensure equity for all learners while meeting national disability guidelines (Rose, 2014). While online learning has the potential to assist students with special needs, many virtual schools do not have the capacity to adequately accommodate students with complex needs, such as moderate to severe learning difficulties (Hashey & Stahl, 2014).

The personalised curriculum delivery via blended learning and online learning can also be applied to at-risk students, providing them with the opportunity for credit recovery (Cox, Repetto & Spitler, 2018) and for students at the other end of the academic spectrum. Johnston and Barbour (2013) found that students accessing advanced placement courses in one virtual school performed comparably to national outcomes and better than students from their own state. In the 2014 academic year, 16.1% of senior secondary students participated in some form of higher education (ACARA, 2015), highlighting the significance of online learning for Australian senior secondary students and most Australian universities use blended and online delivery (Maritz, Jones, & Shwetzer, 2015).

2.4.2 CHALLENGES

While there are many advantages of blended learning and online learning, researchers have also identified a number of challenges. Concerns about student readiness and suitability for online learning have been raised by teachers who suggest that online learning should be available to senior students only (Bolstad & Lin, 2009). They reported teacher concerns that students who already had attendance issues with face-to-face classes were unreliable in the online domain. Nobles (2011) shared the same concerns as Bolstad and Lin, arguing that online learning was not suitable for all students and that full-time enrolment may not be the most suitable study pathway either, given the high dropout rates for full-time students and the high course incompletion rates of full-time online students.

Advancements in technology have already been addressed earlier in this review, but issues such as access to reliable internet service (Wolgemuth et al., 2011) and access to software and hardware for all students within schools (Watson, 2008) remain for the implementation of blended and online delivery. Jefferies and Hyde (2010) did not share the same optimism about blended learning as Christensen, Horn, and Staker

(year) and suggested that the current educational climate was in-between an ICT-free past and an ICT future. They identified students' growing expectations of teachers to use learning management systems but also expressed concern at students' lack of ability to think critically and analyse in a highly intuitive technical world. Wright (2010) also identified the challenges students face with using technology for learning purposes as opposed to social networking purposes. Some students have difficulty using technology to learn.

Queensland schools are concerned about consistent and equitable access to technology since the introduction of the Digital Education Revolution (DER) funding model by the Rudd government in 2008 (Department of Education, Employment and Workplace Relations, 2011). It was meant to ensure that all Years 9 –12 students had access to their own device but the DER funding model ended in 2014 and no similar funding for personal devices has since been introduced. This has led many state and non-state schools to explore a Bring Your Own (BYO) device model that creates issues of equitable access to online content. Teachers have no guarantee that each child in their class will have a device on any given day, which has a negative impact on the teacher's ability to effectively plan blended or online delivery. It is beyond the scope of this study to consider teachers' pedagogical decisions during this uncertain time but it would be an important study to better understand the impact that reduced funding is having on Queensland's momentum to fully leverage blended or online delivery options.

2.4.3 AUSTRALIA K–12 ONLINE LEARNING

An analysis of research related to Australian blended and online developments poses some challenges due to the lack of published research and of a consistent research focus. Powell et al. (2015, p. 4) suggested that Australia has developed "emerging models" in blended learning but provided no specific reference to these models or to the agencies or organisations involved. Other international research and literature reviews have limited information available on Australian blended learning and online learning initiatives (Dichev, Dicheva, Agre, & Angelova, 2013) and Barbour (2018) predominantly examines the state-school sector, and one NSW non-state school. This highlights the need for more research to be undertaken in Australia, to which the current research endeavours to contribute.

Schultz's (2011) research into virtual learning and blended learning identified that all stakeholders need to strike a balance between key issues: equipment needs, professional development, and learning processes. He reported that research in the Australian context is very weak and further research was needed into the effects of different types of blended and online learning in Australia; he also identified that the expansion of blended learning will be a key advancement for rural Australia.

Queensland state schools have access to a powerful state-wide Learning Management System (LMS), The Learning Place, which enables teachers not only to deliver subjects via blended learning to their own students but also to connect with other state schools and to access content from other teachers delivering the same subject. Non-state schools source their own LMS solutions and the decision whether or not to implement blended or online delivery is made by each non-state school.

2.4.4 SUMMARY

K–12 online learning and blended learning research has grown significantly over the past 10 years, providing a deeper understanding of this rapidly growing field (Carnahan & Fulton, 2013). However, Barbour (2013), one of the world's most prolific published researchers on K–12 blended learning and online learning, warns readers to carefully distinguish empirical and peer-reviewed research from corporately sponsored reports.

2.5 STUDENT VOICE

The remaining section of this review investigates student voice literature under the headings: resources and content, socialisation and communication and teacher-student relationship, as identified in the Literature Map (see Appendix B) and Conceptual Framework (see Appendix A).

The initial review of the literature using key search words on student voice identified several student voice themes. The most represented were: communication and socialisation (12 articles); resources and content (12 articles) and teacher-student relationship (8 articles). Less frequently represented student voice themes are summarised in Table 11.

Table 11
Less Represented Student Voice Themes

Theme	# of articles
comparison to face-to-face	5
teacher training	4
technology issues	4
student opinion of online learning	4
flexibility of online learning	3
concerns/challenges	3
like/engagement with online learning	2
student success in online learning	2
improving synchronous delivery	2
induction	1
support services	1
time issues	1
gender	1

The literature search was then expanded to identify a total of 49 articles related to the main themes of communication and socialisation, resources and content, and teacher-student relationship. The themes student aptitude/skill and student engagement were excluded from the expanded search due to scope limitations of the current study. While the themes teacher-student relationship, student aptitude/skill and student engagement yielded the same number of articles in the preliminary search, teacher-student relationship was chosen as the final category to be included in the expanded search, as this was of interest to the researcher's vocational work as a K–12 online school manager.

Themes represented in the expanded word search predominately represent literature from 2008 to 2018 with the majority of these references published in 2009. Seven of the forty-nine articles identified included references to all three main themes identified as the focus of the current study.

2.5.1 RESOURCES AND CONTENT

Literature on resources and content identified five sub-themes.

While the sub-categories barriers and tools are also discussed in the next section *Socialisation and Communication*, from a different point of view.

2.5.1.1 COURSE DESIGN/STRUCTURE

Online course design/structure has been identified as an important part of K–12 online learning. Instructional design can have a positive impact on student

participation and cognitive levels (Dubuclet, Lou, & MacGregor, 2015). Pape and Wicks (2011) advocated for instructional design standards, suggesting that implementing online course standards will assist online schools with key considerations such as the types of resources and content made available to students. Barbour (2013), in his Canadian study into high school student perceptions of effective online course design, argued for careful consideration of type of content, such as providing notes that explain content in different formats and incorporate links, videos and pictures.

Some Australian students reported favourably on the quality of resources in their VET course with 71% of the students rating the resources as high quality (Cashion & Palmieri, 2002), but this was about 18 years ago, at a time when online learning was in its infancy, as 1996–97 was the real beginning of K–12 online learning (Barbour, 2014b).

Barbour (2008) reported that for students to be successful in online learning they need well-designed and organised content and to be able to work independently bearing in mind that the ability for an adolescent to learn independently is less than that of an adult. Chiu (2013) recommended employing cognitive strategies, such as chunking content, to assist secondary learners to succeed in online learning. Pape and Wicks (2011) advocate that K–12 online schools implement quality guidelines to provide rigorous course content. Online standards helped Korean online students to change their perceptions of web-based learning (Lee & Park, 2012).

Rose (2014) highlighted access and equity in course design to ensure online learning opportunities meet the legal requirements for accessibility. Students with disabilities need appropriate adjustments to the online course space which requires additional planning (Deschaine, 2018). Inequity within online learning has been identified as an issue that creates disparity in student achievement (Sturgis & Casey, 2018). Research indicates that students with disabilities who access blended or online courses face a range of challenges (Basham et. al, 2015). Students have reported that participating in online learning is vastly different to their face to face experience of education (2015). To help students with disabilities engage with online learning Sturgis and Casey recommend that school culture is important in developing an online space that

is safe and where students with disabilities feel respected and where relationships are developed between the teacher and the student (Sturgis & Casey, 2018.

Understanding the role of parents in online learning for students with disabilities has been identified as a key factor in student success (Currie-Rubin & Smith, 2014). One of the challenges faced by students with disabilities in online learning was the parents keep the students engaged with their online course (2014). Accessibility was also identified as a barrier to online learning for students with disabilities. Researchers found that students with a learning disability were having difficulty accessing learning because of barriers within the learning management system and websites that did not meet legislative requirements for accessibility (Hashey & Stahl, 2014)

2.5.1.2 TOOLS

The types of tools used in K–12 online learning and matching the tool to the learners' needs was a frequent theme identified in the literature. One United States study identified that the eLearning tools chosen to deliver a course, while they can motivate and engage students, still required teachers to get the best out of the eLearning tools available (Wright, 2010).

One key concern regarding the selection of such tools was the need for the instructional technologies to match the learner's circumstances (Wong & Bakar, 2009). Pratt and Trewern (2011) also identified the need for the technology to match the learner's circumstances and reported that New Zealand students experienced difficulty with online tools, specifically aspects of hardware and software selection. The majority of Malaysian students, however, viewed the selection of discussion forum, chat and dialogue tools as positive aspects to online learning (Wong & Bakar, 2009). They attributed this positive experience to the correct application of tools. Reading (2009) identified a completely different reality for Australian students, reporting a lack of digital tools. Barbour (2013) advocated that K–12 online tools be more personalised and recommended providing personalised self-assessment functionality as a possible expansion of the use of online tools.

Relevant and interactive online resources were found to be a positive aspect of online learning tools. New Zealand students found that relevant resources were the key and that, if the resources were fun, it was less likely students would stop doing the activity (Louwrens & Harnett, 2015). Malaysian secondary students found online mathematics resources and content to be attractive and more exciting than their face-to-face experiences, citing the graphics display, pictures, animation, and interactive learning (learning objects) as reasons for enjoyment (Yit & Sam, 2011).

There were mixed results from students regarding asynchronous aspects of online learning. During asynchronous sessions Canadian students were assigned seat work but students rarely used this time for this work and found the work unchallenging, while during synchronous lessons students and teachers were most productive (Barbour & Hill, 2011). Barbour & Zhang (2012) reported that most of the Canadian students in their study were satisfied with online learning but found that asynchronous course content was not engaging enough. Australian students, while ranking the selected activities positively, did not find all published elements appealing, showing a preference for multimedia (Paris, 2004). Australian researchers also recommended three requirements for a remote learning platform: ubiquity, the ease of use of the tool, and pervasiveness, the ability of the tool to adjust itself to suit the needs of the individual learner (Devlin, Feraud, & Anderson, 2008). They also identified that Australian online learning needs to focus on real-time use of conferencing tools. However, more recent data from Australia might help to draw more reliable conclusions about the Australian context, a need which this study addresses.

2.5.1.4 BARRIERS

A number of resource and content barriers were identified in the literature, with technology a consistent theme. New Zealand students reported that their virtual classes were more difficult than their traditional classes due to access to software and hardware challenges (Pratt & Trewern, 2011). Technology challenges were also identified as a barrier to online learning by Aboriginal and Torres Strait Islander students (Anthony & Keating, 2014). They experienced high dropout rates and have been identified as some of Australia's most disadvantaged students due to limited

access to computers and information. This finding is disappointing, given the extended period of time Australia has been delivering distance education (Oliver & Reeves, 1994) and its commitment to support Aboriginal and Torres Strait Islander learners (Halsey, 2018).

Barriers for students with learning difficulties were also identified in one United States study (Rose, 2014). Rose identified several issues with course design, including the use of images, audio and other assistive technologies and recommended that course content and external links should meet disability standards.

Student autonomy was also identified as a barrier. Barbour & Zhang (2012) reported that New Zealand students were concerned about the level of autonomy they experienced in online learning, with students feeling there was too much. Singapore students also expressed similar concerns to the New Zealand students and reported a lack of teacher monitoring, feedback and facilitation as barriers to online learning (Quek, 2010). Korean students reported inconvenience with regards to the resources and content, suggesting that they should be downloadable (Lee & Park, 2012).

2.5.1.5 SUMMARY OF RESOURCES AND CONTENT

Researchers were in agreement about the importance of instructional design strategies and recommended careful consideration of the type of content used in K–12 online learning. Course design should ensure online learning meets the legal requirements for accessibility. Instructional design standards and content standards were identified as key considerations in developing online learning spaces as students need well designed and well organised content be able to work independently.

Elearning tools were found to motivate and engage students and were found to improve the learning process. While some students experienced difficulty with online tools researchers agreed that instructional technologies need to match the learner's circumstances. Technology challenges were identified as a barrier to online learning with some students finding their virtual classes more difficult than their traditional classes.

Interactive learning objects, such as interactive simulations, found students performing significantly better (Chiu & Churchill, 2016). Students found asynchronous work unchallenging but during synchronous lessons students were most productive and researchers were in agreement about how the teacher can made a positive contribution to K–12 online learning. Researchers recommended including interactive content and learning activities that are relevant will help to improve student engagement.

2.5.2 SOCIALISATION AND COMMUNICATION

Literature on socialisation and communication revealed six sub-themes. While considerable research has been undertaken in the higher education sector into online socialisation and communication, it would be wrong to assume that what has been learnt in the higher education sector will find its way into secondary practice or that it will automatically transfer (Journell, 2010).

2.5.2.1 PEER LEARNING OPPORTUNITIES

Mixed results about peer learning opportunities were reported by researchers. Technical problems were identified as a barrier to facilitating peer-peer learning opportunities in one United States high school (Golden, 2014) and its negative impact is discussed further in the section *Barriers*. Middle and senior school student perceptions of socialisation and communication with peers yielded interesting results in another United States school, with only 44% of the student responses reporting satisfaction with their peer socialisation and communication and 52% admitting that they never made any contact with online peers (Harvey, Greer, Basham, & Hu, 2014). In contrast, Canadian rural students experienced a strong sense of online community; students turned to their peers before seeking assistance from their teacher, building a support community amongst themselves (Barbour & Hill, 2011). This was vastly different from Singapore secondary students, who found a lack of cooperation from others in their online course (Quek, 2010). Students found social challenges and suggested they need to learn more about group roles. Wang (2010) further identified ways students were socialising and communicating with the majority, 82%, communicating to compare or share information. With respect to

social interaction in the online environment, based on student communication, Wang concluded secondary students had not yet reached a deep learning stage.

New Zealand researchers reported positive experiences from students with regard to socialisation and communication in online learning. Students reported developing good relationships in their online course and found better support though online learning (Louwrens & Harnett, 2015). They found a sense of belonging, found it safe to contribute in the online domain, and reported that the social presence helped with their emotional engagement, which is quite different from Singapore students (Wang, 2010). This variance in results might be attributed to a cultural difference, as Maori students intrinsically place a high value on relationships (Louwrens & Harnett, 2015).

An earlier New Zealand study by Wright (2010) found the same positive student attitudes towards online socialisation and communication and concluded that the elearning environment can make peer and collaborative learning opportunities easier. Another study of 250 secondary students from 13 education clusters in New Zealand found similar positive student attitudes about online socialisation and communication, with students finding assistance from their peers and feedback from student contributions to questions and answers helpful (Bolstad & Lin, 2009). An Australian case study into VET student perceptions of online learning also found that students preferred to have peer-to-peer collaboration opportunities (Oliver, Osborne, & Brady, 2009).

2.5.2.2 BARRIERS EXPERIENCED

Several barriers to socialisation and communication in K–12 online learning were identified. Technical barriers were found to affect students' ability to communicate in one asynchronous blended environment where high school students were accessing their course from home. These United States high-school students found communication difficult due to slow internet speeds and, in some instances, found that by the time the student could contribute to the conversation, the topic had changed, leaving some students disliking online learning (Golden, 2014). Canadian

students experienced some technical barriers; however, most students reported being satisfied by their online learning experience (Barbour & Zhang, 2012).

Devlin, Feraud and Anderson (2008) studied the use of interactive distance learning technology and reported Australian students experienced similar barriers to the United States students, with lags in communication or accessing audio. Reading (2009) found that, while students spoke positively about online learning, they also experienced connectivity issues, related to limited bandwidth that impacted their ability to socialise and communicate in their online course. These two Australian studies are now quite old and do not permit firm conclusions to be drawn about Australian student perceptions. More current K–12 studies are needed to provide more data. At that time, Australia had not embarked on upgrading Australia's internet capacity with the National Broadband Network, which would explain the connectivity issues identified in the 2009 studies. The current study anticipates providing such data.

Singapore students experienced teacher-related socialisation and communication barriers in their course, through a lack of teacher monitoring, feedback and facilitation (Lang, 2010). Beese also identified teacher-related barriers in a similar synchronous course. Students in an urban United States high school, expressed poor communication with their teacher as a barrier to their synchronous online course, resulting in high rates of attrition (Beese, 2014).

Golden (2014) found similar barriers to communication as Beese (2014) but also found barriers in student-student communication. Students enrolled in an online course, undertaken from home, experienced barriers in socialisation and communication. These included misunderstandings of online communication, such as students' personal feelings getting in the way of their learning, difficulty getting their ideas across, and some discussions ending up as arguments (Golden, 2014). Two final barriers are related to students with learning difficulties and cyberbullying. Rose (2014) identified several course-design issues that create barriers for students with learning disabilities. His study into access and equity in online learning found that colour selection, use of images, audio text and navigability could be barriers for students with learning difficulties. The final barrier, cyberbullying, is diverse.

McLoughlin, Meyricke, and Burgess (2009) reported that Australian students found that cyberbullying was occurring in varying ways through a number of technologies and that this may have a negative impact on their learning. Cyberbullying was experienced by Australian students through negative psycho-social behaviours which are described as cyber violence which has become identified as a serious threat (2009). Cross et al. (2012) recommend further research into K–12 online learning and cyberbullying.

2.5.2.3 COMMUNICATION

Types of communication, and online communication standards were identified as important considerations with regards to communication in K–12 online learning. Beese found that when there was a breakdown in communication between the teacher and the student this was often a result of unclear preestablished lines of communication (2014). Interestingly the participants in this case study were students who had a Grade Point Average (GPA) of 3.0, or higher and had previously participated in an advanced placement or honours course, suggesting participants of lower academic ability were excluded from this sample. The exclusion of lower performing students has previously been identified as an area of concern for research in K–12 online learning (Barbour, 2010).

The types of communication in K–12 online learning vary from social interaction to deep shared learning and include teacher-student and student-student interactions (Lang, 2010). Singapore students found communication challenging, with more than 82% of home-schooled students' communication interactions in their online course at a basic level (comparing and sharing) and only 3.7% of their communication interactions at a higher level (negotiation of meaning/co-construction of knowledge). Lang concluded that these students had not reached a shared deep learning stage yet. When it comes to who is communicating with whom, Greer, Basham, and Hu (2014) found students communicated less with their peers and more with their teacher in online courses that were led by online teachers. These United States students also reported that they felt it less important to communicate with the peers in teacher led online courses.

Pratt and Trewern (2011) identified similar communication concerns to Greer et al. (2014) and identified the need to improve communication between New Zealand teachers and students. They also found that online students had a wide range of abilities, requiring different forms of support, including provision of more communication opportunities to overcome isolation. In older Australian research on VET students (one of the few Australian studies available), Cashion and Palmieri (2002) reported similar communication concerns. Although VET students reported communication as a positive aspect of their course (71.5%), there was a need for clear protocols for communication in online courses. Before drawing any conclusions about K–12 online communication in an Australian context, more research will need to be undertaken, including this research.

2.5.2.4 TEACHER ENGAGEMENT

Journell (2010, p. 78) challenged Vygotsky's long-standing theory of learning in an United States study where students in one online history course indicated "nearly unanimously" (p. 78) that the teacher was non-essential. This finding contrasts with the social learning theory of Vygotsky (1978). Journell's small sample of secondary students mostly contacted an online teacher when they had a technical problem or a similar administrative enquiry, such as a scheduling issue. They expressed little need for socialisation in their online course which, in part, may be due to the lack of opportunities provided by their online teacher (Journell, 2010). However, Harvey et al. (2014) reported favourably on teacher engagement, with students engaging with their online teacher two to three times a week. Teacher engagement included various interactions with students either via email, online chat room, telephone call or video link up. Their sample also reported significantly less interaction with their peers in courses that were led by online teachers. These positive results could be due to the larger sample size, or because the student participants had a couple of years experience in online courses.

Chargois (2013) also identified positive attitudes towards teacher engagement, where teacher-student interaction had a huge impact on student achievement in algebra. Hawkins, Graham, Sudweeks, and Barbour (2013) found that an increase in the quality and frequency of engagement resulted in an increase in course completion,

but noted that increased engagement did not equate to better student results. Dubuclet and Gregor (2015) reported the same positive impact of teacher engagement and that the teacher encouragement was influential in student participation and learning.

Malaysian students expressed positive perceptions towards teacher interactions in a blended online mathematics tuition course. The students' learning behaviour was described by researchers as individualistic (Yit & Sam, 2011). Borup, Drysdale, and Graham (2014) found that low-performing United States students tended to avoid or ignore teachers' attempts to engage, whereas middle-performing students seemed to benefit most from teacher interactions as the high-performing students were already engaged.

Borup's study into K–12 online interactions between students and teacher/home tutor, reported similar findings to Chargois (2013). Borup identified the importance of teacher/tutor interactions in his study examining the parent's role of supervisor of K–12 online students (Borup, 2013). In his study students felt that teacher/tutor interactions were more valuable to them than learner-content interactions and that teacher/tutor interactions were much more valuable than learner-learner interactions, which supports the findings of Harvey et al. (2014). Borup also reported that 97% of students viewed the learner-parent interactions as motivational.

While these studies reported favourably on teacher engagement in K–12 online courses, teachers have expressed concerns over student difficulties in interacting online for academic purposes (Borup & Stimson, 2017). In their study into how to help United States online students be successful in an online course, teachers identified that students needed structured and consistent mentoring in online courses, acknowledging that while kids were good communicating with friends, when it came to online communication for academic purposes, students require a different set of norms and netiquette. Borup and Stimson also found that when students had access to a dedicated and skilled mentor student retention can be improved.

2.5.2.5 SOCIAL LEARNING/COMMUNITY

Social learning and a sense of community presented mixed results, particularly for the synchronous versus asynchronous aspects of online learning. In addition to positive student attitudes about learning IT skills online, Western Australian students experienced meaningful social learning opportunities through the use of blogging (Trinidad, 2009). In another Western Australian study, Reading also found that students experienced meaningful learning opportunities in the online community. Students found socialisation as a motivating factor (Reading, 2009). The same positive student response to social learning was expressed by New Zealand distance education students. Middle school students reported a sense of belonging, and that they developed good relationships in their online course (Louwrens & Harnett, 2015). A good social presence helped with students' emotional engagement.

Golden (2009) identified United States student concerns with both asynchronous and synchronous aspects of a course. Some students found it difficult for everyone to be on the same page in asynchronous learning because of time lapse and some students expressed their dislike of the discussion board. Feedback about the synchronous discussion was also negative with students finding it too complicated and difficult to get their ideas across. It has also been noted that while there is a variety of subjects that can be taught online some high school subjects will be more suited to synchronous while others more suitable for an asynchronous delivery (Lansangan, 2020).

A preference for face-to-face learning was also expressed in a more recent study (Harvey, Greer, Basham, & Hu, 2014) involving middle and senior school students in an United States online school. Even though 58.6 % liked the online interaction they had with their teachers and peers, students still reported that they missed the social opportunities that face-to-face learning offers. A Canadian study (Barbour & Zhang, 2013) of student experiences in online learning identified one of the five key themes as a lack of sense of community, although students reported largely enjoying their virtual courses. In particular, they liked the synchronous classes and the ability to control their own learning.

2.5.2.6 DIGITAL TOOLS

Three Australian studies identified different concerns related to the use of tools and delivery modes for online learning. All three studies were published in 2008–9 and represent the very limited research into K–12 online learning on Australian students. Devlin, Feraud & Anderson (2008) found that e-mail, chat, voice and various software applications were mostly used to help with socialisation and communication, in order to improve connectedness of Australian rural distance learners. In one Australian study, McLoughlin, Meyricke and Burgess (2009) identified that cyberbullying was occurring through a number of technologies and media, but the specific tools or modes were not identified, making it difficult to draw conclusions. Given the rapid development of technologies over the past decade, more reliable data is needed to gain an accurate understanding of the impact of cyberbullying, and the means by which it occurs.

In one Malaysian study into student perceptions of online communication, 66% of the students indicated that they found online discussion, forum and chat tools helpful and 34% expressed negative perceptions of the online discussion tool (Wong & Bakar, 2009). Belair (2012) also found negative student attitudes to communication in a Canadian case study into communication in a virtual home school. Focusing on the teacher's work as educator, Belair reported that written forms of communication like email may be more effective than regular phone calls, with the majority of the students indicating that they did not take incoming calls from their teacher. Most preferred written communication, only 20% preferring phone calls, from their teachers.

When investigating tools and modes of curriculum delivery, it is important to consider digital pedagogy before any particular digital tool or mode of delivery, so that technology does not drive the pedagogy (Devlin, Feraud, & Anderson, 2008). Digital pedagogy in K–12 online learning is beyond the scope of the current research but it remains an important factor. In a report prepared for the New Zealand Ministry of Education, Wright (2010) acknowledged that young people were technologically literate but lacked understanding of how to use technology educationally. Wright

emphasised the need for pedagogical considerations, in particular, higher-order-thinking digital-learning pedagogies for online delivery.

2.5.2.7 SUMMARY OF SOCIALISATION AND COMMUNICATION

Mostly positive attitudes towards peer learning opportunities were reported, making online learning easier, but some students found a lack of cooperation with peer-peer learning. Barriers to online learning were identified: technical difficulties (predominantly data streaming and connectivity issues), teacher related issues, such as, lack of monitoring and poor teacher communication, student-student communication, as having negative impacts on student learning and resulting in high dropout rates. Design issues such as the use of colour, fonts and images impacted students with learning disabilities. Communication with peers was valued less than communication with teachers and some students find online communication challenging so there is a need to improve communication with teachers and to establish communication protocols.

In a minority of studies teacher engagement was identified as nonessential and was sometimes avoided, but most researchers regarded it favourably, as having a huge impact and improving retention rates. Student perceptions of social learning were mixed, some them meaningful, feeling a sense of belonging. Others expressed concerns with both synchronous and asynchronous online learning, even though they enjoyed it, they missed social opportunities from traditional education.

A wide range of digital tools is used in K–12 online learning but may not be used by students. Discussion forums and chat tools were found to be helpful but written communication is more effective than verbal. Some students were experiencing cyberbullying online. The following section addresses the final main area of the current research, teacher-student relationships.

2.5.3 TEACHER-STUDENT RELATIONSHIP

Literature on teacher-student relationship identified only three sub-themes , which emphasises the need for further research. As identified in the Conceptual Framework

(see Appendix A) and Literature Map (see Appendix B) this research addresses the gap in the literature related to student perceptions of the enablers and barriers in the teacher-student relationships.

2.5.3.1 IMPROVED RELATIONSHIPS

Australian and New Zealand students showed a preference for student-teacher relationships, identifying that the teacher is far more important than the instructional design of the content (Eklund, Kay, & Lynch, 2009) and that the student-teacher relationship was important for a sense of support and belonging (Louwrens & Harnett, 2015). United States researchers found similar results and that the teacher-student relationship can be improved through pedagogical considerations, such as intentionally fostering interaction and co-operative learning opportunities in the online environment (Wright, 2010). Malaysian researchers also reported positive student perceptions of teacher-student relationships and that tutor initiated interactions were the key to these perceptions (Yit & Sam, 2011). Korean students reported a number of barriers to their online learning experience and explicitly stated that little interaction with teachers was a negative aspect (Lee & Park, 2012). In one United States study teachers increased opportunities for teacher-student communication interactions, which students perceived as individualised attention (Oliver, Osborne, & Brady, 2009). Harding (2012), in an Australian study into home-schooling students, while his study was not related to online learning, highlighted an important advantage for those studying at home. He reported that the home supervisor (parent) is at a distinct advantage in developing an individualised teacher-student relationship, as they have known the child for years prior to assuming the role of education supervisor.

In one Canadian study students did not identify the teacher-student relationship as the most critical aspect. During synchronous sessions students sought assistance from classmates before turning to teacher and did not use other support systems from the school (Barbour & Hill, 2011). Barbour and Zhang (2012) found a similar result with students identifying their peers as the most important aspect of their synchronous learning opportunity. Teacher presence was identified to be an important factor in students' perceptions of online learning. Wright (2010) found

that eLearning provided greater opportunities for co-operation, which resulted in New Zealand students experiencing better teacher-student relationships, and identified online pedagogies as a critical aspect of student engagement. New Zealand students that were provided with collaborative learning opportunities and encouraged to participate in online discussion, demonstrated higher engagement levels, and more positive attitudes towards online learning (Wright, 2010). However, United States students found learner-instructor interactions were much more valuable than learner-learner interactions (Borup, 2013). This difference in results might be because Borup's student participants were home-schooling students or other factors such as socialisation (Medlin, 2013) might impact on Borup's results, as occurred in Golden's study, where home-schooling students had difficulties with asynchronous aspects of their online learning (Golden, 2014).

This is an area for further study due to the increasing number of students enrolling in virtual schooling (Barbour & Hill, 2011). Borup & Stimson (2017) identified the importance of professional development for teachers to improve teacher-student relationships.

2.5.3.2 IMPROVED OUTCOMES/ENGAGEMENT

While the sub-categories *Improved Relationships* and *Improved Outcomes* have some conceptual overlap, these themes have been separated to highlight improvements researchers have found in each area. An essential staring point regarding student outcomes is to consider how the teacher approaches their role. In one United States study into teacher beliefs about teacher-student interactions and student outcomes, Ploeg (2012), referencing the work of Carol Dweck, showed how teacher belief in the malleability of intelligence positively affects student learning and that teachers need to believe that anyone can learn through the use of appropriate strategies. Dubuclet, Lou and MacGregor (2015) confirmed the importance of the teacher's role and how their approach influenced student participation in online learning.

Not all students take advantage of opportunities to develop relationships with their online teachers (Lee & Park, 2012), but quality online resources and frequent

teacher-student interaction opportunities improved student retention rates (Chargois, 2013).

2.5.3.3 BARRIERS

One challenge in developing teacher-student relationships is the ability level of the student. Researchers identified a pattern of avoidance of teacher interactions among lower-achieving students while higher-achieving students were proactively engaging in their course (Borup, Drysdale, & Graham, 2014). Self-regulation was identified in the literature as a barrier to developing teacher-student relationships. In a middle-school, online English course, Korean students reported difficulty with self-direction (Lee & Park, 2012). Wong and Bakar (2009) found a similar result, with the majority of their Malaysian students admitting a lack of self-regulation strategies like goal setting. Other barriers were lack of teacher monitoring, feedback and facilitation (Lang, 2010). Further research is required to gain a better understanding of how to improve self-regulation in K–12 online learning (Siko, 2014.

2.5.3.4 SUMMARY OF TEACHER-STUDENT RELATIONSHIPS

Literature on teacher-student relationship yielded the least amount of information on the topic compared to socialisation and communication and resources and content. Mixed results were identified about the role of the teacher in developing teacher-student relationships.

The role of the teacher was found to be far more important than that of instructional design with the student-teacher relationship found to be important for student success in online learning. Researchers also found that the teacher-student relationships can be improved pedagogically and that when tutors planned interactions students displayed positive attitudes towards their online teacher-student relationships. Conversely, one study reported that when students had little interaction with their online teachers they displayed negative attitudes towards online learning. During synchronous sessions students were found to seek assistance from classmates before turning to teacher and in some cases did not use other support systems from the school or take advantage of opportunities to develop relationships with their online teachers.

Researchers reported a number of barriers to online teacher student relationships. Individual student ability, avoidance of teacher-student interactions, lack of teacher monitoring and feedback and facilitation were identified as barriers to developing an online teacher-student relationship. Researchers were in agreement that the approach of the teacher influenced student participation.

Researchers identified the need for online course standards and for teacher professional development to improve student perceptions of online learning. Online mentoring was identified as an important aspect of supporting students online. Communication and interaction expectations should be included in online course standards and online teachers should be provided with professional development in mentoring.

2.5.4 GAPS IN THE LITERATURE

This review of the literature identified that: K–12 online learning is rapidly growing, that online learning has the potential to completely transform education (Horn & Staker, 2011), and that our understanding of online learning is mostly drawn from the higher education sector (Louwrens & Hartnett, 2015). There has been an increase in research into K–12 online learning. The literature suggests that more empirical studies from the students' perspective would improve understanding of the effectiveness of online learning (Barbour, 2013) and more research from the students' experience is required (Barbour & Zhang, 2012). Australian research into online learning has been identified as weak (Schultz, 2011), which is disappointing, given Australia's long history with the Schools of the Air and early adoption of technology like telematics in the late 1970–80s (Oliver & Reeves, 1994). The current research addresses the gaps identified in the literature, as outlined below.

2.5.4.1 RESOURCES AND CONTENT

Research on K–12 online learning identified that additional research is required into: what constitutes a well-designed and well-organised course for adolescents (Barbour, 2008), course content and interactive content (Oliver, Osborne, & Brady, 2009), and asynchronous strategies (Barbour & Hill, 2011). This research investigates

Queensland senior secondary students' perceptions of what is helpful and what barriers students face with online resources and content.

2.5.4.2 SOCIALISATION AND COMMUNICATION

Literature on socialisation and communication identified the need for more research into understanding K–12 online socialisation (Harvey et al., 2014; National Association of Independent Schools, 2010), including the role of peers (Pratt, 2018) and forms of communication e.g. text messaging and social media (Belaire, 2012) and how communication among parents, students and teachers can be improved (Siko, 2014). This research explores students' perceptions of communication and socialisation opportunities in online learning.

2.5.4.3 TEACHER-STUDENT RELATIONSHIP

Very little research on teacher-student relationships has been undertaken (Chargois, 2013). Of the few studies available, the role of the teacher in guiding students in online learning (Lee & Park, 2012) and the quality of learner-parent and parent-instructor interactions (Borup, 2013) were identified as areas for further investigation. This research addresses this gap in the literature on students' perceptions of their online teacher-student relationship.

2.5.4 SUMMARY

This review has discussed studies that have explored the students' experience of online learning and provide initial understanding in the areas of: communication and socialisation (Harvey et al., 2014); resources and content (Siko, 2014), and teacher-student relationship (Lee & Park, 2012). Research into K–12 online learning has not kept up with its rapid uptake. We need to know what is working and what is not (Pratt, 2018; Choon-Lang, 2010). This research addresses the gap in the literature on Queensland senior secondary students' perceptions of enablers and barriers in online learning in the themes of resources and content, socialisation and communication, and teacher-student relationship.

2.6 RESEARCH QUESTIONS

Based on the review of the literature within this chapter the following is the research questions that guide the research.

The main question for this research is:

> What are regional, rural and remote Queensland senior secondary student perceptions of enablers and barriers when undertaking an online course?

The subordinate research questions are:

1. What kind of resource and content factors influence a student's perception of online learning?
2. How does socialisation and communication in online courses contribute to a student's perception of online learning?
3. In what ways does the teacher-student relationship contribute towards a student's perception of online learning?

The following chapter, *Chapter 3: Methodology*, provides the theoretical framework.

CHAPTER THREE: METHODOLOGY

3.1 INTRODUCTION

This chapter describes the methodological approach of the study to the collection of data and its analysis. It discusses the limitations and specific contextual issues related to undertaking Queensland senior secondary research during 2018/2019. This chapter also describes the use of social constructivism as the research paradigm, where the researcher uses an ethnographic approach to understand the experience of online learning from a student participant perspective. Social constructivism is an extension of constructivism that considers the role of others within the context of their culture and in the development of ideas and experiences (Woolfolk & Margetts, 2007). Social constructivism scientifically and systematically studies people and cultures within their own context and requires the researcher to enter into community to understand their experience and the understandings of those being researched (Bergold & Thomas, 2012). The social constructivist paradigm was selected as it works harmoniously within the chosen Mixed Method Sequential Explanatory methodology.

In this study the researcher observed the students' situation of online learning and endeavoured to make sense of student perceptions of the enablers and barriers to online learning. The conceptual framework (Appendix A) guided the researcher to explore the students' perceptions of: resources and content, socialisation and communication and the teacher-student relationship, as they apply to student engagement with online learning. The Mixed Methods Research (MMR) methodology is appropriate for the context of the project as it is consistent with the pragmatic worldview of the researcher (Agerfalk, 2013). The researcher identifies as a pragmatist and is motivated by practical considerations (Creswell, 2013). This research paradigm facilitates an avenue for student voice with regards to online resources and content, online socialisation and communication, and the online teacher-student relationship as perceived by the student.

3.2 REITERATION OF THE PURPOSE OF THE RESEARCH

A review of the literature identified the need for more research in the area of student voice (Schultz, 2011), which is significantly underrepresented with much of the focus of the current body of literature on the teacher's point of view (Barbour, McLaren, & Zhang, 2012). Further, Australian literature on K–12 online learning has also been identified as being weak in representation (Schultz, 2012).

3.2.1 PURPOSE OF THE RESEARCH

This study addresses the gaps in the literature, particularly the gap in Australian K–12 literature, and explored the theme of student voice, as it relates to secondary online students' perceptions of the barriers and enablers of undertaking an online course (Appendix B), from the perspective of the three main student voice themes from the review of the literature:

1. resources and content in online courses
2. socialisation and communication in online courses
3. teacher-student relationships in online courses

3.2.2 RESEARCH QUESTIONS

The main question for this research is:

> What are regional, rural and remote Queensland senior secondary student perceptions of the enablers and barriers when undertaking an online course?

Subsidiary questions derived from the main research question are:

1. What kind of resource and content factors influence a student's perception of online learning?
2. How does socialisation and communication in online courses contribute to a student's perception of online learning?
3. In what ways does the teacher-student relationship contribute towards a student's perception of online learning?

3.2.3 DATA COLLECTION CHALLENGES

In *Chapter Three: Methodology* limitations of the study are outlined including the challenges of collecting data in Queensland secondary schools in 2018. *Chapter One: Introduction* discussed these challenges in detail. In addition to the challenges of undertaking research on senior secondary schooling during the transition from the old OP and QCE system to the new ATAR and new QCE systems, the research was also negatively impacted by what some researchers have identified as respondent fatigue. Respondent fatigue is a well-documented phenomenon which ultimately results in diminished data quality (Lavrakas, 2008). Burke in her recent Queensland study into the arts among Australian home educated students, reported that initial response rates to her survey were only 14%. Burke identified this result to be "particularly low" (Burke, 2017). Like Burke's experience with the online survey, this research also experienced a low rate of participation. In addition to the significant challenges of undertaking research in Queensland schools in 2018, the following is anecdotal evidence of other significant challenges faced in securing student participants for the present study.

3.2.4 MULTIPLE STAKEHOLDERS

The first challenge faced in undertaking research about students within the Queensland education system is negotiating with multiple stakeholders. As the current research involves the participation of minors, informed consent is required from not just the student participant but also their parent/carer. In addition to their consent, informed consent is also required from the Department of Education (DoE). Due to the structure of state education, securing informed consent requires working with several key organisational stakeholders. In the first instance permission is required from Education Queensland Central Office Research Division. After which, if the research is to be undertaken within the confines of one DoE Queensland region, then approval from the Regional Director is required. For research that involves more than one region, Regional Director approval is not required, as the Central Office defaults as the authority for the researcher. Regardless of whether the research involves multiple regions, or only one region, permission is then required from the principal of each school to be involved.

3.2.5 FINAL AUTHORITY RESTING WITH THE PRINCIPAL

The final approval to approach students and parents/care-givers regarding participation in the research rests at a school level and is the delegated authority of the school principal. A Principal's autonomy means they may block state research priorities, regardless of whether the research is aligned to DoE Central Office Research Division research priorities (see Table 12). This is the case with the current research.

Table 12
Department of Education Priority Research Themes

Initiative	Focus
Learning in the 21st Century	To identify the opportunities and impacts of technological and cultural change on learning methods and pedagogies
Empowered Learners	Building on knowledge and provide evidence of activities and methods which will improve learners' outcomes and experience.
The Diverse Learner	Research that facilitates better outcomes for learners of all backgrounds and abilities with a special focus on Aboriginal and Torres Strait Islander Queenslanders.
Leadership Expertise and Support	Research on how staff leadership and educator expertise can best be supported.
Community Connections and Integration	Research that provides evidence to build on understanding of the complex relationships between learning centres, learners, parents, and the broader community, including universities, business and industry.
Health and well-being	Research that supports the health and well-being of all staff and learners.
Transitions Pathways and Lifelong Learning	Research that informs effective transition strategies at a systemic and local level and helps deliver positive outcomes for learners.
Pedagogy, Curriculum and Assessment	Research into what is important to know and how best to learn, teach and assess through evidence-based practices that enable positive outcomes for students.

To demonstrate this point, at the time of data collection, the current research project aligned with three of the departmental research priorities specifically, the priority areas: *Learning in the 21st Century*, *Empowered Learners* and *Pedagogy, Curriculum and Assessment*. Furthermore, these research priorities are in juxtaposition to one Queensland principal who declined their school's participation on the grounds that research in schools is a waste of time.

Understanding the aforementioned challenge, it could be argued that undertaking research within state schools across regions, could be a limitation of the study. It is

the researcher's personal opinion from experience working in state education in classified roles as Deputy Principal that, when Regional Directors provide a directive or advocate for an initiative, schools within that region would generally participate in that initiative, including being accountable for it. The current research invited participation from 26 state schools across multiple regions but only seven state high schools, 27%, agreed to participate in the research. This low participation rate was a direct result of the autonomy of each school's principal to decline. As the researcher was reliant on cold-calling individual schools, the research project had no other advocacy, whereas if the research was within one region, with the Regional Director as the authorizing delegate, it could be argued that the study may have secured a much higher participation rate. Without the Principal Consent Form researchers are unable to further pursue potential participants from those schools. The lack of Principal Consent Forms significantly diminished potential state school participants. Of the invited non-state schools, half remained in communication with the researcher, including returning the Principal Consent Forms.

3.2.6 INCONSISTENCY OF PROMOTION OF RESEARCH PARTICIPATION OPPORTUNITY

Seeking informed consent was further challenged as the researcher was not able to manage the promotion of the research within the invited schools. While seven state school principals did agree to participate, only one (7%) provided a student participant from their school. One example of the negative impact of not being able to promote the research personally within a school was a very large state school of distance education, where the principal agreed to support the research but did not follow through. The school in question, while verbal assent was given, offered only to promote the research by putting a small advertisement within their senior school newsletter.

It was the preference of the researcher, in an effort to provide a consistent method to promote the research, that schools forward a brief email (prepared by the researcher) to the Year 10–12 students and families. While the researcher, as a school principal, acknowledges the right that schools have with regards to how each school runs and what initiatives, or research endeavours, they chose to engage in. The impact on the student participation rate of having no control over the promotion of the research

within schools has been immense. In *Chapter Five: Discussion & Conclusions*, to test the assumptions presented in this section, a recommendation for further research, it is suggested that the same study be undertaken, but within one region with the support and advocacy of the Regional Director, as opposed to multiple regions.

3.2.7 STAFF MOVEMENT

The final challenge faced was the high rate of staff movement within the state school system. The researcher began cold-calling principals in Semester Two of 2017, to establish interest from potential state schools. While making these cold-calls the researcher was unsuccessful in talking directly to numerous school principals and, in numerous instances, could only leave phone messages with Administration staff or Principal's Personal Assistant. In addition, while following up with school principals in the subsequent semester, Semester One of 2018, the researcher found that schools were experiencing frequent changes to school leadership staff. This was most notable in rural and remote regions. One example was a state school from the Darling Downs South West Region, where the researcher had negotiated principal consent with two Acting Principals successfully, yet had no agreement from the third Acting Principal who would not engage with the researcher even to the extent of returning phone calls. The researcher was informed, from a contact at the school, that there had been three Acting Principals in an eighteen-month period, which demonstrates the challenge in securing participants because of high turnover rates of school leadership.

3.2 PERSPECTIVES ON EDUCATIONAL RESEARCH

In the context of educational research, to understand the art and science of teaching requires a focus on the scientific investigation of teaching methods based on sound scientific methods within the social sciences context (Nind & Lewthwaite, 2018). There are two important considerations with regard to educational research, the research paradigm and the research method or approach (Creswell, 2014). Further, the relationship between the paradigm and the methodology are equally important because the selection of the paradigm informs the data collection and analysis required to achieve the research outcomes (Kivunja & Kuyini, 2017). There are

several accepted research paradigms which have been used in education research and are discussed below.

3.2.1 EDUCATION RESEARCH PARADIGMS

Research paradigms are informed by philosophical ideologies about research, with the dominant ones in educational research being positivism, constructivist/interpretivist, transformative/critical and pragmatic philosophies (Kivunja & Kuyini, 2017).

3.2.2 EDUCATION RESEARCH METHODS

The second consideration with regards to educational research relates to the research method. Educational research methodologies include quantitative methods, qualitative methods, and mixed methodologies.

The research method defines the research framework that the researcher employed to achieve research objectives and guide them in the selection of suitable data collection tools and data analysis methods (Creswell, 2014). No single method is more correct than another and the final selection of the research paradigm and research method is influenced by the researcher's personal epistemological and ontological assumptions (Benixen & Feucht, 2010).

The selection of the research paradigm is further influenced by the literature (Chilisa & Kawulich, 2012). These factors converge at the point where the researcher positions themselves paradigmatically with the choice of the methodological approach consistent with their personal epistemology and ontology and the literature (Cameron, 2011). Mixed Methods Research (MMR) as the chosen research paradigm for the current research is discussed below with the researcher's epistemological and ontological assumptions discussed at length later in the chapter.

3.4 METHODOLOGICAL APPROACH

The following introduces MMR as an emerging and valid research methodology for educational research.

3.4.1 INTRODUCTION

The evolution of MMR, including its introduction as the third methodological movement, is discussed as well as its use as an organising construct. This section concludes with a brief discussion of the benefits and challenges of MMR.

3.4.2 A MIXED METHODS PARADIGM

The research methodology chosen for the current research is a Mixed Methods Explanatory Sequential approach (see Appendix D and Creswell (2014)). An MMR methodology combines both quantitative and qualitative data collection techniques with data collection and analysis of both quantitative and qualitative nature within a single study (Driscoll, 2007). MMR endeavours to give equal priority to both data sets through two phases of data collection and analysis (Terrell, 2012). The collection and analysis of quantitative data identifies the major themes and is followed by the collection and analysis of the qualitative data (Evans, Coon & Ume, 2011).

The phase-one data collection of the current study provided the quantitative sampling required to identify the students' perspective of their online learning experience and were collected through an anonymous survey (see Appendix F). The phase-one instrument provided 139 answers from 61 questions in the areas of: general student background, online resources and content, online socialisation and communication, online teacher-student relationships and general online learning.

The phase-two data were collected through follow-up focus group sessions (see Appendix G). Focus group sessions were chosen to provide an avenue for students to expand responses to the phase-one data collection. The phase-two qualitative data collection tool was designed after analysing the phase-one data and was informed by the conceptual framework (see Appendix A). The phase-two qualitative data are used to help explain the phase-one quantitative results in more detail, and to provide

a more in-depth understanding through the use of purposefully designed questions from the phase-one data collection results (Creswell, 2014).

3.4.3 DEFINITION

For the purpose of this study, MMR, as a research discipline, is defined as research that involves collecting, analysing and interpreting quantitative and qualitative data within a single study or series of studies (Leech & Onwuegbuzie, 2008) that are products of the pragmatist paradigm (Teddlie & Tashakkori, 2009). Johnson, Onwuegbuzie and Turner (2007) investigated 19 MMR definitions and found the common theme of all of them was to emphasise the intellectual and practical convergence of quantitative and qualitative methods.

3.4.4 THE PURPOSE OF MIXED METHODS (STUDY AIMS)

The focus of this study was to investigate senior secondary student perceptions of the enablers and barriers in online learning. Specifically, this research explores a group of Queensland regional, rural and remote students' perceptions of the enablers and barriers in Authority online subjects (locally known to schools as OP or academic subjects), Authority Registered online subjects (locally known to schools as SAS or vocational subjects), and Vocation Educational Training (locally known to schools as VET or certificate qualifications) online courses. The students participating in this study either access courses online from a school or from home as a part of their full-time senior schooling program. Participants are Queensland senior secondary students, Years 10–12 from traditional face-to-face schooling contexts, distance education contexts, or home-schooling contexts, who are undertaking online courses as a part of their Senior Education Training Plan (SETP) as a requirement for their Queensland Certificate of Education (QCE). Participants engage in at least one online course that is approved by the Queensland Curriculum Assessment Authority (QCAA). Student participants are full-time students. A fuller treatment of the selection of participants is undertaken below under the heading *Selection of Participants*.

3.4.7 FORMATIVE PERIOD (1950S – 1980S)

During this period most social scientists used quantitative either/or qualitative as the definitive categories for research (Axinn & Pearce, 2007) in what has been described as an ardent debate (Johnson & Onwuegbuzie, 2004). Quantitative advocates presented arguments for a positivist philosophy with qualitative advocates rejecting positivism, promoting the superiority of constructivism, idealism and humanism (Johnson & Onwuegbuzie, 2004). During the 1970s in particular, the quantitative versus qualitative research methods debate was seen as igniting postmodernism which in turn became an accepted philosophy (Evans, Coon, & Ume, 2011).

3.4.8 PARADIGM DEBATE (1970S – LATE 1990S)

During the following 20 years the paradigm debate centred around the respective merits of quantitative and qualitative research methodologies (Evans, Coon, & Ume, 2011). This debate resulted in two research cultures: one of rich observational data (qualitative) and the other boasting the superiority of hard data (quantitative) (Johnson & Onwuegbuzie, 2004). Towards the end of this period some social researchers were suggesting that both methodologies not only had merit, but also that "accommodation between paradigms is possible" (Guba, 1990, p. 81).

3.4.9 PROCEDURAL DEVELOPMENT PERIOD (LATE 1980S–2000S)

The end of the paradigm wars of the 1970s and 1990s ushered in a developmental period, where some researchers called for a truce between the two major paradigms (Terrell, 2012). It was believed necessary to put an end to the arguments over quantitative versus qualitative methods (Truscott, Swars, Smith, Thornton-Reid, Zhao, Dooley, & Matthews, 2010). During this period paradigm relativism emerged, which was the idea that whatever method best suited the particular research problem was viewed as an acceptable research methodology (Tashakkori & Teddlie, 2003).

3.4.10 ADVOCACY AS A SEPARATE DESIGN PERIOD (2000+)

The final period has seen MMR continue in its rapid growth and acceptance as the third methodological movement (Tashakkori & Teddlie, 2011). During this time there has been acceptance amongst social scientists that there is no major problem area that should be studied exclusively with one research method (Terrell, 2012).

This view is not universally held by all. Guest (2103), for example, argues that MMR will not always be not a suitable research methodology for large scale research.

Regardless of the delayed formal recognition of the third movement, some researchers have ignored methodologists for some time and have been mixing research methods when they felt a mixed approach would be best (Johnson & Onwuegbuzie, 2007). Following is a discussion of the unique challenges, and advantages, that the researcher has had to consider when investigating the suitability of MMR as a research paradigm.

3.5 METHODS OF DATA COLLECTION AND ANALYSIS

The followings section discusses the data collection and analysis methods.

3.5.1 RESEARCH DESIGN

An adapted version of Creswell's (2014) Sequential Explanatory research design (Appendix D) guided the data collection and analysis of the research. MMR combines quantitative and qualitative methods so that strengths are maximised the limitations within each single method are reduced (Andrew & Halcomb, 2007). MMR provides an avenue for open-ended data (qualitative) and closed (quantitative) data, providing different types of information within the one study (Creswell, 2014). MMR as the third methodological framework is philosophically in line with long held tenets such as triangulation (De Lisle, 2011). Triangulation uses different data sets and addresses concerns of validity through the use of multiple data sets (Taber, 2008). Creswell et al. in Tashakkori and Teddlie (2011) promoted triangulation as a concurrent research design within MMR where the researcher is able to give equal priority within the one study to qualitative and quantitative data (Tashakkori & Teddlie, 2011). Greene, Caracelli and Graham in Johnson and Onwuegbuzie, (2004) also identified triangulation, alongside complementarity, initiation, expansion and development as the main purposes of MMR. Triangulation provides MMR with an opportunity for the researcher to corroborate results (Johnson & Onwuegbuzie, 2004) and to seek convergent results (Greee, Caracelli, & Graham, 1989). The current research used triangulation by utilising a Sequential Explanatory design that places equal status to both data sets.

3.5.2 STATING THE RESEARCH PROBLEM

This research aims to investigate Queensland regional, rural and remote senior-secondary perceptions, regarding enablers and barriers to online learning, in order to better understand the student experience of online learning. A review of the literature identified the need for more research in the area of student voice (Schultz, 2011) and that it is underrepresented in published work (Barbour, McLaren, & Zhang, 2012). This study addresses the gap in the literature related to student voice, student perceptions of the enablers and barriers in online learning, the Australian P–12 online learning scene, and Queensland regional, rural and remote senior-secondary students in particular. Consequently, this study aims to provide an avenue for the student voice in the following areas identified in the literature with the following goals:

1. Explore the enablers and barriers that relate to resourcing and content in online courses.
2. Investigate student perceptions of the enablers and barriers in socialisation and communication in online courses.
3. Research student perceptions of the enablers and barriers in the teacher-student relationships in online courses.
4. Provide recommendations on potential areas for further research into senior secondary students undertaking online learning in Queensland.

The goals are translated into the main research question:

> What are senior-secondary student perceptions of enablers and barriers to online courses in regional, rural and remote locations in Queensland?

Subsidiary research questions to be researched and analysed are:

1. What kind of resource and content factors influence student perceptions of online learning?
2. How does socialisation and communication in online courses contribute to student perceptions of online learning?
3. In what ways does the teacher-student relationship contribute towards a student perception of online learning?

3.5.3 DEVELOPING THE RESEARCH PLAN

The framework for the research is an adapted version of Creswell's (2014) Explanatory Sequential research design (Appendix D). The explanatory sequential MM approach guided the data collection and analysis of the research in two phases. Phase one data collection and analysis of quantitative data utilised an anonymous online survey. Following phase one data collection, a more in-depth understanding of the quantitative results explored in phase two through the use of follow-up focus group sessions. The combined results of phase one and phase two revealed the answers to the research questions and identified further research opportunities.

3.5.4 DATA COLLECTION

Two common ways of gathering data in MMR methodology are surveys (Fielding, 2012) and interview questions (Venkatesh, Brown, & Bala, 2016). During the first phase of data collection, an anonymous cross-sectional web-based survey (Appendix F), with predominantly closed questions, were used. During the second phase of data collection, follow-up, in-depth, focus group interviews, with open ended questions was used (Fetters, Curry, & Creswell, 2013) (Appendix G).

3.5.5 ANONYMOUS ONLINE SURVEY

Phase one data collection and analysis of quantitative data utilised an anonymous online survey. The online survey is an original instrument, and is influenced by similar studies (Bennett & Barbour, 2012; Blaine, 2017; Barbour, 2007; Bolstad & Lin, 2009), with original questions informed by the Conceptual Framework (Appendix A) and the Literature Framework (Appendix B) of the study. It focuses on the main themes of resources and content, socialisation and communication, and teacher-student relationship.

The anonymous survey was accessed online through a secure site at the University of Southern Queensland, via LimeSurvey. Each participant was issued with a URL link and their own unique login code to access the survey. The online survey is an original instrument, and is influenced by similar studies (Bennett & Barbour, 2012; Blaine, 2017; Barbour, 2007; Bolstad & Lin, 2009), with original questions informed by the Conceptual Framework (Appendix A) and the Literature Framework

(Appendix B) of the study. It focuses on the main themes of: resources and content, socialisation and communication, and teacher-student relationship.

The anonymous online survey was scheduled for Semester One of 2018, with opportunity for students to participate in the survey over a period of six weeks. Some participants may only participate in an online course during Semester One of 2018, so the survey is scheduled towards the end of semester, to allow students to be close to the end of their online course. Additionally, the survey is scheduled for this period to provide sufficient time for data analysis and the design of the follow-up focus group questions during the following semester.

3.5.6 FOCUS GROUP INTERVIEWS

Phase two follow-up interviews allow for an expansion of the data collected during phase one (Creswell, 2014). The data from phase one informed and shape the qualitative data for the phase two focus group sessions (Appendix G). During the focus groups participants provided further data from their initial responses during the quantitative phase-one survey. An audio recording of each focus group, obtained with a portable MP4 recording device, provided deeper reflection, accuracy and analysis. Pertinent insights and quotes were transcribed and used in the data analysis. Student identities were kept anonymous.

The follow-up focus group sessions are scheduled to be delivered virtually, and undertaken using a web-based tool that students can access via their school's internet system, or from home. The web-conference tool needed to address particular internet filtering systems used by both independent schools and state schools. As well as focus group questions, students were also be given the opportunity to provide any additional information that might not have been collected during the phase-one survey.

3.5.7 DATA ANALYSIS

A range of data analysis methodologies are available within the scope of MMR. In educational research, a challenge for the researcher is to separate themselves from the task in such a way that data sets remain credible and, in the context of an MMR,

that data reliability is maintained during the combination of data sets (Hussein, 2015). The separation of self can be managed through the use of a reliable research framework and, in particular, with the selection and design of data collection tools and respective analysis frameworks. The discussion below explains the selection and design of the data analysis methodology employed in the research.

3.5.8 QUANTITATIVE ANALYSIS

Phase-one data collection seeks to collect rigorous quantitative sampling data (Cresswell, 2014). Phase one analysis used numerical data for descriptions and comparing groups (Fetters, Curry, & Creswell, 2013). Descriptive statistics such as standard deviations was used to analyse the phase-one data. Results were used to design the phase-two qualitative questions (Creswell, 2014).

3.5.9 QUALITATIVE ANALYSIS

The phase-two data collection is a purposeful sampling (Creswell, 2014) informed by the phase one data analysis. Upon completion of the phase one data analysis the researcher drafted six questions within the themes of socialisation and communication, teacher-student relationship, resources and content and finally a general open-ended question where participants were provided with the opportunity to provide feedback regarding their online learning experience. Participants were also be given the opportunity to identify for the final time barriers and enablers in online learning as well as any other general feedback they would like to give.

During the second phase of data collection the open-ended questions were asked at a follow up focus group (Appendix G). These sessions were recorded and transcribed for accuracy to maintain the integrity of student voice. Transcribing the focus group sessions assisted in the successful reporting of any potentially different or competing points of view and assisted the researcher in remaining objective and maintaining the integrity of the analysis of the phase two data (John, 2013).

Phase-two data analysis employed a thematic data analysis method and was undertaken through the use of text coding and theme development (Creswell, Plano Clark, & Garrett, 2008). The thematic analysis was used to interpret the qualitative

data and allowed for the subsequent interpretation and explanation of the qualitative and quantitative data (Appendix D). The final interpretation and explanation of quantitative and qualitative data collected are discussed at length in *Chapter 4: Results* and *Chapter 5: Discussion and Conclusions* of the thesis.

3.5.10 CONTEXT OF THE CHANGE TO METHODOLOGICAL APPROACH

The first section of the survey produced general contextual information about the participants. The remaining sections of the anonymous survey require a deeper treatment than the first section. Before the analysis of the remaining sections of the phase one data collection, a discussion of the need to change the analysis method due to the small sample size is presented.

The original research design was to use descriptive statistics, and standard deviations, to analyse the phase one data. However due to the small sample size, there is not enough quantitative data for such analysis. With only sixteen student participants, as discussed earlier, it was clear that the originally proposed analysis method would no longer be appropriate to investigate the data. After consultation with research supervisors, it was decided that discourse analysis would be an appropriate analysis method for the small phase one data collection. The follow-up focus group analysis would be retained and use thematic analysis methodology.

Gee's discourse analysis was chosen as it provides the researcher with the opportunity to look for "patterns and links within and across utterances in order to form hypotheses about how meaning is being constructed and organized" (Gee, 2005, p. 118). This is an appropriate method for a small sample size. In addition, discourse analysis has been used by Henri in distance education theory to understand the nature of computer-mediated communication and is an appropriate selection for this study (Smith, Clark, & Blomeyer, 2005).

During the analysis of the phase one results it was noted that responses could be organised into three categories, enablers, barriers and neutral. Enablers refers to things that teachers or students do that enable success in online learning. Barriers refers to things teachers or students do that have a negative impact on online

learning. Neutral referred to things that neither enhanced nor detracted from the online learning experience. For example, for question D8, when students were asked to identify ways that promote socialisation and communication, 25% of the students identified that they find forums and blogs helpful, so this response was identified as an enabler.

Within these three main themes, where relevant, it was further identified if the response was related to a teacher action/decision, or if it was something related to a student's action/decision.

Using the same question as an example, forums and blogs are categorised as an enabler for students to successfully engage in online learning, and as the use of the forum or blog is a teacher decision, D8 is identified as being a teacher issue. The third category used was a neutral response, such as Question D6 where the students were asked if there was any face-to-face component to their course. Answers were closed with a yes, no option.

The decision to code the student responses in this way was to facilitate answering the initial research question to identify the enablers and barriers students face in online learning.

This method of organising the phase one data was used for each of the main sections of the survey, sections C, D, E and F, with the following discussion focussing on Section C, student responses to questions about the resources and content of their online course.

3.6 POSITION OF THE RESEARCHER

Schools, universities, colleges and other educational organisations are in the business of social epistemology. Social epistemology involves the construction and use of knowledge by society and is moral in nature (Stengel, 1995). This moral pursuit of knowledge acquisition highlights the responsibility of those within schools, universities and colleges as the gatekeepers of knowledge construction. Gatekeepers such as teachers, book writers, researchers and lecturers have a moral responsibility

towards their fellow citizens as they engaging in research and the important work of knowledge construction. Goldman and Kearns (1995) advocated that truth is the fundamental aim of humanity and the highest epistemic value of education. This fundamental aim is to provide an educational process that gives such pre-eminence to truth allows its participants to construct their own epistemic belief system (Hofer & Bendixen, 2012). Highlighting the moral obligation of education in the context of the construction of new knowledge, such as the current research, is vital because those who engage either as a participant or recipient of the findings of the research will potentially be influenced by any new knowledge arising from the research and therefore must be mindful of the moral obligation of the construction of knowledge.

Justified belief (Hai-Jew, 2014) is the process of knowledge construction with justification, which determines an individual's epistemic belief system (Hofer & Bendixen, 2012). Personal epistemology is intrinsically related to how humans live and how an individual's epistemology predisposes their ontology (Hofer & Bendixen, 2012). That is, an individual's ways of knowing predispose their way of being (Reybold, 2002). An individual's personal belief about knowledge, consciously or unconsciously, drives them to manifest a personal epistemology, day by day, moment by moment. Personal epistemology also includes the individual's context, such as race, gender and culture which places a "direct force in human thought and behavior" (Belenky et al., 1986, p. 14). Reybold (2002) concludes that, as culture, gender and societal position influence epistemic belief, this influence also has a direct bearing on an individual's ontology.

Epistemic belief and ontology are intrinsically intertwined (Benixen & Feucht 2010). In an educational context this is demonstrated in how a teacher's beliefs impact their practice (Olafson & Schraw, 2006). If a teacher's belief about pedagogical matters not only informs but dictates how they manifest these beliefs, how much more will epistemic truth construction affect an individual's way of being. In a thoughtful contemplation of these matters one must embrace with sobriety the influence educational organizations and research pose upon the developing epistemologies of learners. What one believes, researches and teaches will have the potential to affect how another member of society expresses their way of being as a direct result of belief, as decision-making is the hallmark of personal epistemology (Reybold, 2002).

This belief must therefore be measured in approaching research with the onus on the researcher to ensure objectivity and subjectivity are exercised appropriately as one undertakes human research.

3.7 OBJECTIVITY AND SUBJECTIVITY

The relationship between the researcher and the object is in essence an issue of objectivity and subjectivity. Addressing the addage, "The researcher you are is the person you are" (Salihu, 2016, p. 1323) invites reflection of the researcher, specifically, reflection on the subjectivity of the researcher. Researchers need to consider their own subjectivity as an important aspect of making meaning (Cameron, 2011). This requires researchers to identify their own subjective disposition and endeavour to approach research as objectively as possible so that the results do not present a disposition towards the researcher (Van der Rijst et al., 2008). This separation of self from the task is difficult, and requires not only a healthy sense of self-knowledge, but also maturity in accepting research outcomes that may be contrary to the researcher's natural inclination and prejudices (Heikkinen, 2007). Clark (2009) advocates that the researcher needs to recognize that their own perspective is not any truer than the perspective of others.

To successfully accept a different, or competing, point of view is only part of the difficulty in remaining objective in research work. Another difficulty is the unreliability of the human perception (Peeters, Beltyukova, & Martin, 2013). A question regarding the reliability of human perception can be asked by considering the simple analogy of four or five eye-witnesses to a car accident. Owing to the complex nature of the human mind (Cronk, 1999) and even the natural inclination towards certain intelligences (Zobisch, Donald, & Swanson, 2015), each eye-witness of the one event is potentially likely to recount what occurred from their own specific perception. The accounts of the people who witness the same event may present similarities, but due to the complexity of the human mind (Cronk, 1999), to potentially recount different details due to certain intelligences of the eye-witnesses themselves (Zobisch, Donald, & Swanson, 2015). When approaching the current research problem, the real challenge for the researcher is separation of self from the object in such a way that reliable research data can be identified (Hussein, 2015).

This level of objectivity has been identified as being very difficult to achieve as the subject and the object have been deemed by phenomenologists to be “inextricably intertwined” (Stigma, 2010, p. 4).

This issue of objectivity, without a research framework leaves research vulnerable to subjectivity. The use of a framework such as the MMR assists with the problem of objectivity and unreliability as the method strengthens the validity of the research (Ponce & Pagan-Maldonado, 2015). Adopting a research framework will not, however, render the research immune from subjectivity or unreliability. Professional dialogue within a reliable research framework such as MMR will nevertheless provide a platform of dialogue for the researcher to discuss the findings and present more credible outcomes (Ponce & Pagan-Maldonado, 2015).

3.8 SELECTION OF PARTICIPANT

Queensland students from Years 10–12 from traditional face-to-face schooling contexts, distance education contexts, or home-schooling contexts, who participate in at least one online course that is approved by the Queensland Curriculum Assessment Authority (QCAA) as a part of the students SETP, were invited to participate in the research. Student participants are full-time students who are undertaking an Authority (locally know to schools as OP subject), Authority Registered (locally known to schools as SAS subject), Vocational Education Training (VET) course (locally know to schools as vocational unit of competencies or qualifications), or early-entry university courses, such as University of Southern Queensland’s (USQ) Head Start courses. All online courses are approved from the QCAA and attract QCE points. Selection of participants is by a convenience sample, with students from state, non-state school and home-schooling contexts invited to participate.

State and non-state schools access the services of state and non-state schools of distance education, Registered Training Organisations (RTO) or university online courses to provide their students with additional courses in fulfilment of the student’s SETP to meet the requirements of the student’s QCE. Regional, rural, and remote state and non-state schools enrol students in online courses because some are unable

to provide their senior secondary students with a wide senior subject choice. Additionally, some regional, rural and remote schools enrol students in online courses to meet university prerequisites for degree level studies after Year 12, or to support students in early-entry university programs to secure placement offers for Year 12 graduates. Some schools utilize blended delivery for their students to deliver subjects such as a Certificate I in Engineering, undertaking the practical component on campus, and accessing the services of a third-party RTO for the theoretical component, as an independent online course connected to the Certificate I in Engineering qualification. In the author's experience, the most commonly used non-state schools of distance education were Riverside Christian College, Jubilee Christian College and Australian Christian College, Moreton, and the most commonly enrolled state schools of distance education were Brisbane School of Distance Education (BSDE), Cairns School of Distance Education (CSDE), and Longreach School of Distance Education (LSDE) (Education Queensland, 2013).

Non-state student participants were solicited from regional, rural and remote Queensland state school regions (see Table 13). With no contacts within the Far North Region the researcher was unsuccessful in soliciting participation from schools from that region. As the research is across educational jurisdictions (across regions), permission to approach state schools was required from the Research Department within Central Office of the Department of Education Queensland. Upon approval from Central Office permission from each state school was subsequently sought, where each state school principal has the authority to decline participation in the research, regardless of Central Office approval. Invitations to participate in the study were sent via email to state school representatives after phone contact had been made with the principal or their delegate. After making contact with each school site and securing Principal approval and identifying the key staff member on site to assist with communication between the researcher and participants, twenty-six state schools were invited via email to participate, with only five state high school principal consent forms returned. A detailed discussion of the participation rate and its impact on the study can be found in *Chapter Four: Results*.

Table 13

Department of Education, Queensland Regions

Region
North Coast Region
Central Coast Region
Darling Downs South West Region
North Queensland Region
Far North Queensland Region

Non-state school student participants were solicited from four non-state schools of distance education (see Table 14). Non-state distance education student participants access the services of a non-state school of distance education that offers courses approved from the QCAA, a VET unit of competency, a full VET qualification, or a university subject.

Table 14

Non-state Schools of Distance Education

School Name
Australian Christian College, Moreton
Groves Christian college
Jubilee Christian
Riverside Christian college

The final group of invited participants were home-schooled students who were recruited through the Queensland chapter of the Home Education Association (HEA) as well as the Queensland chapter of Isolated Children's Parents' Association (ICPA). Invitations to participate in the study were facilitated through HEA or ICPA. Home-schooling participants were provided with the opportunity to identify their specific context during the phase one data collection stage, in the general background questions section of the anonymous online survey instrument. Students from home-schooling contexts were potentially drawn from anywhere in Queensland.

All student participants, regardless of their specific context, were required to provide informed consent to participate in the research.

3.8.1 INFORMED CONSENT

Ensuring research participants are fully informed of the risks associated with participation in a research project is the responsibility of the researcher (Punch & Oancea, 2014). The researcher is responsible for undertaking this advisory role with all potential participants prior to securing permissions from the participants. It is also the responsibility of the researcher to seek consent from participants in an informed

manner (Hammersley & Traianou, 2012). This informed consent also needs to include information about operational procedures that was used during the research project. These procedures include strategies such as data collection techniques, data analysis methodology and reporting methods. The researcher must, to the best of their ability, report any possible consequences, and the severity of any risks, to the participants so that they are able to make an informed decision about participation in the research (Creswell, 2014).

McDougall and Jones (as cited in Coombes, Danaher, & Danaher, 2004) caution researchers about the ethical and political risks associated with educational research. Their concerns rest in ensuring that all participants are fully informed of the methodology of the research project (Coombes, Danaher, & Danaher, 2004). Matters such as oppressive consequences and the emotional aspects (Jarzabkowski, 2001) of the research are also relevant issues facing those participating in the current research. In this case, the researcher needed to attempt to consider all possible effects which this research might have on the student participants that may occur prior, during and even after the research.

Informed consent was addressed in this project by providing potential participants with this information prior to agreeing to participate in this project. Informed consent was also solicited from the parents/carers of the students participating in the research because the student participants were minors (see Appendix H). As a part of the informed consent process, participants were also provided with an assurance that they could withdraw from the research project at any time and that withdrawal from the project was without consequence. Further informed consent from state schools was sought from Central Office of the Department of Education, as well as at a local school level from the principal of the school. For non-state schools, informed consent was solicited from principals prior to inviting parents/carers and students to participate in the research. At all stages and all levels of organisational structure, all parties were fully informed (Hammersley & Traianou, 2012) of the relevant risks including the ethical and political implications of educational research.

3.9 ETHICS OF EDUCATIONAL RESEARCH

Research within the social science field requires a thorough understanding of the significant ethical and political implications that present themselves during research in the human domain (Cohen, Manion, & Morrison, 2013). Researchers need to be concerned with the risks and uncertainties associated with the examination of people and how they behave or react in certain situations (Seidman, 2013). It is the responsibility of the researcher to consider all possible risks to participants (present and future risks) involved with educational research (Graham et al., 2013). In addressing the risks and potential effects to the researcher and the researched, these unknown variables become strategic uncertainties that need to be considered in research planning (Creswell, 2013). Of concern to research participants is how anonymity and confidentiality were maintained.

3.10 ANONYMITY AND CONFIDENTIALITY

One of the moral obligations of research is to preserve the confidentiality and anonymity of the participants (White & Corbett, 2014). The integrity of the process was affected by the researcher's capacity to manage any concerns that participants may have regarding anonymity. The researcher must ensure confidence among participants that confidentiality was maintained (Fassinger & Morrow, 2013).

In the context of the current research a number of challenges relating to anonymity of key personnel exist, such as the involvement of small schools (Seidman, 2013). To maintain anonymity the phase-one data collection was undertaken through an anonymous online survey where no questions sought to identify any participant. Jarzabkowski, as cited in Danaher, Danaher and Moriarty (2004), suggests that there is a need to employ strategies to ensure true anonymity of key personnel and in this instance the teachers acting as fellow researchers needed to be provided with this assurance. Pseudonyms can also be used to help with the preservation of anonymity (Nias, 1993) and were implemented to ensure protection of the identities of the participants in research. During phase-two data collection in focus group sessions, pseudonyms were used to help preserve anonymity (Seidman, 2013). The uses of coding was used during the data analysis to protect the identifies of the participants.

This anonymity and confidentiality must be maintained while at the same time respecting student participant voice.

3.10.1 RECORDING AND REPRESENTING PARTICIPANTS' VOICES

It is the researcher's responsibility to exercise integrity when recording and representing the participants' voices and, in some cases, having their voices kept silent (Jarzabkowski, 2001). To ensure student participant voices were heard and represented with integrity, technology was employed. Phase-one data collection used a web-based anonymous online survey which allowed the researcher to export all student responses. These responses are made available in the form of appendices for the purpose of validating the student responses. The phase-two data collection employed follow-up focus group sessions where audio recording was used to ensure accurate recording of the participants' voices. These processes of data collection were selected to ensure the protection of the voices of the participants ensuring the contribution of the research will demonstrate integrity (John, 2013).

3.11 PROPOSED CONTRIBUTION

As identified in *Chapter Two: Literature Review*, a number of authors have identified that K–12 online learning and P–12 online learning is an open research field, and people with an interest within K–12/P–12 online learning will benefit from the research. This research contributes to the global understanding of Queensland regional, rural and remote senior-secondary student perceptions of the enablers and barriers they face when undertaking a course online. It makes a unique contribution to understanding senior secondary student experiences of resources and content, socialisation and communication, and teacher-student relationships in the online realm. It is anticipated the research makes a methodological contribution, a contribution to policy development within Australia and a contribution to Australian K–12 online practice.

3.11.1 METHODOLOGICAL CONTRIBUTION

The study aims to explore student voice with an explanatory sequential mixed methods research design that covers student voice in relation to: resources and

content, socialisation and communication, and teacher-student relationships. The first phase of quantitative data collection was undertaken with the use of an anonymous survey with explicit questions related to the aforementioned themes identified from the literature. To avoid bias and preconceived notions, the data analysis was aligned to the research questions and was informed by the participants' responses. The qualitative data collection and analysis was informed by the phase-one quantitative analysis with both data collection instruments aligned to the literature and theoretical framework. The research is informed by Garrett, Anderson and Archer's Community of Inquiry (CoI) model (Garrison, Anderson, & Archer, 2000) which is widely accepted as a way for understanding online learning as it relates to higher education (Garrison, Anderson, & Archer, 2010; Cohen & Holstein, 2018; Kozan & Caskurlu, 2018; Kilis & Yıldırım, 2018; Caskurly, 2018). In 2014 the CoI model was identified as showing 2002 Google Scholar citations and more recently the author repeated this search which resulted in 2391 citations. The CoI model has demonstrated itself to be a definitive way of viewing online learning and has been chosen as a guiding framework due to its close alignment to the results of the literature review and as the model has remained an important aspect of dialogue for nearly two decades notwithstanding *The Internet and Higher Education Journal* released a special issue in 2010 highlighting the contribution of the model to research and practice (Swan, 2010). Further in a recent construct validity study the constructs of the three presences of the CoI framework were re-examined which resulted in empirical evidence which confirmed each subdimension of the CoI model (Caskurlu, 2018). Finally, Barbour (2018) urges K–12 researchers to consider making their methodological techniques more sophisticated and to explore promising practices from adult education that have shown success in the adult contexts. The CoI model has been chosen as a guiding framework as for the past 19 years the CoI model has demonstrated its sustained success over time (Caskurlu, 2018).

The current research is oriented towards student voice, in particular the students' view of online learning, and it guided the development of a student-centred online learning framework that reflects the interconnectedness of: online resources and content, online socialisation and communication, and online teacher-student relationships in much the same way as the inter-dynamic relationships of the CoI model, specifically the interplay between social presence and teacher presence,

cognitive presence and teacher presence and finally cognitive presence and social presence.

3.11.2 CONTRIBUTION TO POLICY

There could be potential benefits for Queensland and National school policy from an increased understanding of regional, rural and remote senior secondary students studying OP, SAS and VET subjects online.

National and State policy governing bodies, such as the national Department of Education (DET), the Queensland Curriculum and Assessment Authority (QCAA), the Queensland Department of Education and Training (DET) could use this research to inform policy and promote the advancement of online learning in Queensland and influence state and non-state schools of distance education in the areas of resourcing and content, socialisation and communication and teacher-student relationships.

This research also has the potential to contribute to local policy decision-making at a campus level. There are potential benefits for Principals, Deputy Principals, Heads of Department and teachers as they will better understand the needs of Queensland students studying OP, SAS and VET subjects online, and this increased understanding will better inform school policy and procedural decisions.

3.11.3 CONTRIBUTION TO PRACTICE

As well as aiding local decision making at a pragmatic level, online teachers will benefit from a deeper understanding of the student experience of online learning, that could lead to better online course design, standards and frameworks emerging at a grass-roots level. Third party VET providers may benefit from the research through understanding secondary students' learning needs in the areas of: resourcing and content, online socialisation and communication, and teacher-student relationships.

Ultimately, it is anticipated that future students will reap the most reward from this research endeavour as the information it provides is considered and potentially, where relevant, changes to policy, management, pedagogy and pastoral care are made, resulting in positive changes that improve student outcomes in online learning.

3.12 LIMITATIONS OF THE RESEARCH

The researcher acknowledges the limitations of this study. This study was limited by the geographical boundaries established by the researcher with participants being selected exclusively from regional, rural and remote Queensland secondary schools only. The study is limited in its scope as invited student participants are from Years 10–12 only. This study is also limited by the research methodology chosen and limitations associated with a PhD program. Additionally, data collection occured over a period of only approximately twelve months, limiting the breadth of the research. Further, significant changes in Queensland education occurred over the period of time in which the research was undertaken. The introduction to Queensland of the ATAR system, the new senior syllabus, the new external assessment, and new QCE, mean that Queensland secondary schools are very committed and preoccupied with the implementation of the new systems which took priority, for some schools, at the time of data collection. The researcher cannot emphasise in strong enough terms the negative impact that undertaking research during this period of change has had on school and student participation rates within the present study. This is discussed at length in *Chapter 4: Results*.

3.13 SUMMARY

This chapter described the research design chosen for this study. The research methodology chosen is a MM Explanatory Sequential approach (Appendix D). The research combined quantitative and qualitative data collection techniques (Creswell, 2014) and gave equal priority to both data sets through a two-phase data collection process (Terrell, 2012).

There are a number of challenges that have been identified with the use of MMR such as the time that it takes to collect and analyse data, the challenge of giving equal priority to both data collection phases, and equal attention to data analysis phases (Terrell, 2012). Cameron warns of the potential for the research to be given only superficial treatment due to the burden on the resources and lack of expertise in both methodologies (Cameron, 2015) with Morse (2003) dismissing MMR as a research fad.

While MMR has its critics, it offers a range of advantages to researchers. Creswell promotes that employing a MMR methodology provides the researcher with the opportunity to combine two forms of data, qualitative and quantitative, and argues that mixing the data provides a stronger understanding of the subject that either methodology by itself could not achieve (2014, p. 215). Further it is suggested that a deeper understanding of a subject through a second opportunity to investigate participant responses such as phase two follow up interviews has been recognised as a strength of MMR (Driscoll, Appiah-Yeboah, Salib & Rupert, 2007). Other advantages of MMR include the bridge building between paradigm and methodology (Cameron, 2011), triangulation of data (Patton, 2006), and MMR's position to better answer specific research questions (Niglas, 2004). Finally, Morse's (2003) concern about MMR as a fad has clearly been dispelled with the recognition of MMR as a mainstream research method, including the recognition of MMR as the third research method (Venkatesh, Brown, & Bala, 2013) and it has been suggested that MMR will continue to grow in popularity as this new methodology becomes increasingly understood (Evans, Coon, & Ume, 2011).

The most common ways of gathering data in MMR methodology are surveys (Fielding, 2012) and interview questions (Venkatesh, Brown, & Bala, 2016). In the context of the current research, the phase one anonymous survey (Appendix F) provided the quantitative sampling required to identify the students' perspective of their online learning experience and phase two qualitative data (Appendix G) was used to help explain the quantitative results in more detail and provide a more in-depth understanding (Creswell, 2014) with the use of purposefully designed questions from the phase one data collection results.

Phase-one analysis used numerical data for descriptions and comparing groups (Fetters, Curry, & Creswell, 2013). Descriptive statistics was used to analyse the phase one data. Following a process of literature review, design, collection and interpretation led to phase-two data collection. Results from phase one was used to design the phase two qualitative questions (Creswell, 2014). During phase two, thematic data analysis was undertaken through the use of text coding and theme development (Creswell, Plano Clark, & Garrett, 2008). The thematic analysis was

used to interpret the qualitative data and allowed for the subsequent interpretation and explanation of the qualitative and quantitative data (Appendix D).

The researcher has fully informed all potential participants of the risks associated with participation in the research (Punch & Oancea, 2014) and has sought informed consent in a formal manner (Hammersley & Traianou, 2012) including seeking consent from their parents as the student participants are minors (see Appendix H). To maintain anonymity the phase one data collection stage was undertaken through an anonymous online survey where no questions sought to identify any participant. For the phase two data collection, during the focus group sessions, pseudonyms was used to help with the preservation of the self (Seidman, 2013) and was implemented to ensure protection of the identities of the participants in this research.

The researcher also acknowledges the limitations of this study. The study is limited by the geographical boundaries, with the participants being selected from only Queensland regional, rural and remote secondary schools. This study is also limited by the research methodology and the limitations associated with a PhD program.

This research contributes to the global understanding of senior secondary student perceptions of enablers and barriers with regard to online resources and content, online socialisation and communication and online teacher-student relationship. This research provides an avenue for the student voice and for students to express their experience of online learning. It is anticipated that this student voice will contribute to the future development of Australian and Queensland school policy and practice and that this research identified a student-centred online learning framework that can be used by Australian schools to guide the development of Australian online course standards, online course design and online teacher pedagogies. It is anticipated that national and state policy and educational ministers, Principals, Deputy Principals, Heads of Departments and teachers will benefit from an increased understanding of regional rural and remote senior secondary students' experience of studying academic, vocational and VET subjects online. The research also anticipates providing student voice and representation within online educational practices. It is anticipated that state and non-state schools, schools of distance education, online

teachers, and home-school supervisors would benefit from a deeper understanding of the students' experience of online learning.

The following chapter presents the results of the research which was undertaken during Semester Two of 2018.

CHAPTER FOUR: RESULTS

4.1 INTRODUCTION

This research explores Queensland regional, rural and remote senior secondary student perceptions of the enablers and barriers they experience with online learning. *Chapter Two: Literature Review* presented an extensive review of the Australian and Queensland education landscape. The review of the literature also included a detailed exploration of K–12 online learning literature to provide the theoretical context for the research. The K–12 online learning literature was scanned and grouped within the three main sub-themes: resources and content, socialisation and communication, and teacher-student relationship as represented in the Literature Map (see Appendix B). In concert with the review of the literature The Conceptual Framework (see Appendix A) shaped the research questions as defined in *Chapter Three: Methodology*. In Chapter Three a detailed discussion was provided on the methodological approach chosen for the study. It proposed the use of MMR as the most suitable research method to address the overarching research questions identified in *Chapter One: Introduction.* This chapter reports the findings of the data collection and provides a detailed analysis of data collected in the phase one, and phase two data collection cycles.

Phase one data collection used an anonymous online survey. After analysing the results from phase one, a second data collection was undertaken through follow-up focus group sessions. This chapter presents a detailed discussion of the findings from the two data collection cycles where the analysis identifies the enablers and barriers in online learning within the three sub-themes: resources and content, socialisation and communication and teacher-student relationship. This chapter concludes with a summary of the findings which become the basis of discussion for *Chapter Five: Discussion & Conclusions*, where the results are discussed in light of other K–12 online learning theories and literature as well as recommendations for areas of further research.

4.1.*1* *PARTICIPATION RATES*

The aforementioned data collection challenges negatively impacted the student participation rates in both state and non-state sectors. Seeking informed consent from the non-state sector was not as convoluted as the state sector. For non-state schools from the independent sector, seeking Principal consent was much easier. One of the reasons it was easier was that Central or Regional Office approval was not required prior to approaching the principal. The participation rate of state schools was only 4% (27% agreed in principle but most had no students participate) whereas securing principal informed consent in the non-state sector yielded a 75% participation rate. While there is a huge margin between the two sector outcomes, it is important to put the non-state result in context. While the 75% rate reports strong results, this 75% translates to, three out of a total of four non-state schools who agreed to participate. As the participation numbers are extremely low for the non-state sector, caution is required for drawing conclusions about comparisons between state and non-state participation. It is also possible that a higher participation rate for the non-state sector could be related to the researcher's occupation at the time of the research. During this time the researcher was principal of a non-state school and had previously engaged with these schools on official school business. However, the researcher also worked in recent years for the state system in classified roles, and personally knew staff within four of the invited state schools.

As the current research is focused on Queensland rural regional and remote students, schools from multiple state school regions were extended to twenty-seven state schools from five regions of the Department of Education Queensland, North Coast Region, Central Coast region, Darling Downs South West Region, North Queensland region and Far North Queensland Region. These schools were traditional secondary schools, Years 7–12 or P–10 schools. Additionally, four non-state schools were invited to participate. The four non-state schools were all P–12 schools.

A total of sixteen student participants from state and non-state schools participated in the research (see Table 16). Given thirty-one state and non-state schools were invited to participate in the research, sixteen student participants from all was a very disappointing outcome for the researcher. After consultation with research

supervisors, it was decided that while the sample was on the small size for an MMR and, in particular, for the quantitative data, that nonetheless, the sample size was sufficient to continue with.

Table 16
Student Participant Numbers

Survey Section	Question Theme	# of participants
Section A	About you	16
Section B	About your online course	16
Section C	Resources and content	15
Section D	Socialisation and communication	14
Section E	Teacher-student relationship	14
Section F	General online learning questions	14

4.1.2 DATA COLLECTION

The research methodology chosen is a Mixed Method Sequential Explanatory approach (see Appendix D). A mixed methods approach combines both quantitative and qualitative data collection techniques (Creswell, 2014) with analysis of both quantitative and qualitative data in a single study (Driscoll, 2007), giving equal priority to both data sets through the two phases of data collection (Terrell, 2012). The collection and analysis of quantitative data identifies the major themes and is followed by the collection and analysis of the qualitative data (Evans et al., 2011).

The phase one Anonymous Survey (see Appendix F) provided quantitative sampling to identify the students' perspectives of their online learning experience within three main areas as identified on the Conceptual Framework (see Appendix A) and Literature Map (see Appendix B). The phase one instrument provided 114 responses from 52 questions in the areas of: background, resources and content, socialisation and communication, and teacher-student relationship and general online learning questions.

The qualitative data used to help explain the quantitative results in more detail and to provide a more in-depth understanding (Creswell, 2014) with the use of purposefully designed questions from the phase one data collection results. The phase two qualitative data collection tool was designed after analysing the phase one data. Following is a discussion on the details of data collection tools.

4.1.3 PHASE ONE DATA COLLECTION AND ANALYSIS

Phase one data collection was facilitated by an anonymous online survey (Appendix F) and was designed to collect rigorous quantitative sampling data (Cresswell, 2014).

4.1.4 ANONYMOUS ONLINE SURVEY STRUCTURE

The data collection for the anonymous survey was accessed online through a secure site of the University of Southern Queensland. The online survey (see Appendix F) was designed with six sections, *Sections A – F*, with the first two sections, *Sections A & B*, focussing on the student's study context and the type of online course they are engaged in. *Sections C, D* and *E* explored the main three themes, resources and content, socialisation and communication and teacher-student relationship as identified in the Conceptual Framework (see Appendix A) and Literature Map (see Appendix B) and made up the body of the research. The final section of the survey, *F*, asked ten general questions about students' online learning experience.

The survey asks students a total of 52 questions with a fair distribution of questions across each section of the survey. Eleven of the 52 questions were asked using a Likert-type scale providing a total of 114 responses, see Table 17. An advantage of using a Likert Scale is that it and it is easy to administer (Richards et al., 2019) which was a large consideration in designing the survey as the participants were secondary students. A number of K–12 studies have used this method of data collection including recent studies on student voice (Martin & Bollinger, 2018; Varthis & Anderson, 2018 and Balboni et al., 2018).

Table 17
Anonymous Online Survey Structure

Survey Section	Question Theme	Number of questions	Total number of responses options
Section A	About you	9	9
Section B	About your online course	8	8
Section C	Resources and content	8	25
Section D	Socialisation and communication	8	22
Section E	Teacher-student relationship	9	23
Section F	General online learning questions	10	27
Total number of questions and responses		52	114

Further, the assumption was made during the design phase of the survey that the potential participants would be of the age range of about 15 years of age through to

17 years of age. Assuming enrolment into schooling occurred at 5 years of age into Prep a Likert-style scale for several of the survey questions, to make it as easy as possible for an adolescent to engage in. The Likert-style scale proved students to respond to a range of stimuli in a simple format (see Table 18).

Table 18
Likert-style Response Ranges

Scale	Question Number
Strongly agree-Strongly disagree	C1
Very helpful-Not helpful at all	C2
Always-Never	C3
Very often-Never	D1
Very high-Very low	D2
Strongly agree-Strongly disagree	E1
Most/all-Never	E4
Extremely important-Not important at all	F2
Strongly agree-Strongly disagree	F3

4.1.5 PHASE ONE DATA COLLECTION

The first section of the survey, *Background Questions* (see Appendix F) included two subsections. The first subsection asked questions about the student's general context and the second part asked questions about the student's online course. The breakdown of the student participants by year level revealed that the majority of student participants were in Year 11 (64%) and 22% were Year 10 students, with the remaining students in Year 12 (14%). None of the participants identified as Indigenous or Torres Strait Islanders, with 64% of the students female and 36% male.

Fifty-seven per cent of the students were enrolled in a non-state school of distance education and 7% were in a campus-based non-state school. The remaining students were either campus-based state school students (22%) or identified as home schooled (14%). Most of the student participants (93%) were studying full-time loads, which in Queensland equates to a minimum of five subjects with most undertaking six subjects to fulfil the obligations of the Senior Education Training Plan. Sixty-our per cent of the students reported as being with the current educational provider for three or more years, and 21% were less than a year with the current provider. The remaining student participants were with their current education provider for between one and two years. Forty-two per cent of the students were undertaking an

online course for the first time, 50% of all student participants were taking only one online course, and 42% were enrolled in three or more online courses.

The second subsection of the first category of questions asked the student to provide information about the type of online course they were taking. No participants were repeating their online course and among the sixteen students they reported undertaking a combined total of twenty-two OP courses, eight SAS subjects, two Certificate courses, all Level III or higher on the Australian Qualifications Framework (AQF). One student participant was undertaking an early entry university course, such as the University of Southern Queensland Head Start course. Sixty-seven per cent of the courses that students were engaging in were OP courses, with only 24% of the course representation at the SAS level. The most popular OP courses were Maths A with 42%, Senior English 35%, Biology Science and History with 21% of the students taking these courses. This finding is not surprising as within the Queensland QCE system it is a mandatory requirement for all students to have a passing semester of English and Maths.

When asked why the students were taking their course online, other than the 50% who were studying as a home-based learner or home schooler, through a distance education school, only 29% of the campus-based participants reported that they were taking their course because their base campus school did not offer the course that they were enrolled in. Forty-two per cent of campus-based students engaged in their course at home, with the remainder of the campus-based students (14%) engaged in the online course in their spare lessons at school. When asked where students engage with the online course, 29% of the students engaged with their course on campus in either the school library, in a designated room for the study, or in a general classroom, leaving the remaining students, 71%, engaging in their online course in the home environment. Before drawing conclusions about home-schooled participants and distance education students, it is important not to draw a distinction between them, as it became apparent through the focus group sessions that students interchangeably used the terms distance education and home-schooling or variations of the term home-schooled. Most of the students spent either 1–3 hours a week on their online course (42%) or 5–10 hours a week (42%). The majority of the students,

67%, used a laptop computer for their studies and 21% reported using a desktop computer, the remaining student using an iPad or similar mobile device.

4.2 *FINDINGS*

4.2.1 PHASE ONE

The second section of the survey asked students eight questions about the resources and content within the online courses.

4.2.1.1 PHASE ONE RESOURCES AND CONTENT

Through the survey questions, students provided insights into what resources and content they find helpful in their online course and what resources and content they did not find helpful. In each main section of the survey, sections C, D & E, the final two questions, were designed to explore the student's perceptions of things that enable their success in online learning and identify things that are barriers to successfully engaging in their online course.

Section C of the survey, questions on the resources and content (C1–C8), included questions that mostly related to teacher actions or teacher decisions related to their online delivery. One exception is C6, which asked the students about the frequency with which they accessed the resources and content from their online space. When asked about the quality of the resources and content students were largely in agreement as to the high quality of resources (C1). Eighty per cent of the students agreed that the IT hardware they were supplied with to undertake their course was of high quality and only 6% strongly disagreed that their IT hardware was of high quality (SQ003). This same response trend was represented through each of the sub-question response fields within the C1 question. For example, a high percentage, 67% of students, strongly agreed or agreed that the speed of their internet was sufficient for their online learning with the same low percentage of respondents, 6%, strongly disagreeing (SQ002). A similar proportion of students also agreed that the multimedia used in their course was reliable with 80% of the students in agreement and 6% strongly disagreeing (SQ004). Throughout the remainder of the survey it was observed that approximately the same size of negative perceptions towards online learning were identified and in the phase two focus groups this negative theme

remained. Due to the small number of participants in the focus groups the percentile increased, but in reality, this percentage translated to being one student's point of view.

Students were asked to identify which online tools they felt were most helpful (C2). The responses to the nine online tools were fairly evenly spread with video resources being identified by 60% of the students as being helpful (SQ005). The tool the students rated lowest was the use of forum/blogs with only 27% of the students reporting the helpfulness of the tool (SQ006). This data is consistent with the student responses to things teachers do to promote good communication and socialisation within online learning (D8).

When asked about the frequency of the use of the tools offered in their online course (C3), it may not be surprising that 100% of the students reported the use of word documents and PDFs (SQ007) as one might expect the use of text in an online course. A similarly high rate, 93%, was reported on the use of the PowerPoint or similar presentation tool (SQ008). Video resources, web conferencing, email, learning objects and forum/blogs were equally reported by 73% of the students (SQ002, 003, 005, 006 & 009). It is important to note the high rate of use of forums and blogs (SQ006) and the students' previous response about the usefulness of forums and blogs with only 27% identifying forum and blogs as helpful (SQ006, from C2). Students were asked to identify any other tools used that were not listed in C3, with YouTube, digital textbooks and Excel reported as being used in online courses (C4).

Students were asked about how often they would access the resources and content available to them (C6). Fifty-three per cent of the students reported accessing resources and content more than once a day and 29% of the students reported accessing the resources and content three to five times a week.

The second last question, an open field question, asked the students which resources and content they found the most helpful when engaging in online learning. Forty per cent of the students reported that webinars were the most helpful for them in online learning. Other things such as videos and PowerPoint were identified, but two things

that had not already been identified throughout this section of the survey were folders and dot point notes. One student reported that when the teacher used folders to organise the work that they found that helpful and another student reported that when they were supplied with dot-point PowerPoint presentations or notes, they found this the most helpful way for them to learn. For the last question in this section, students were asked to identify the things that they found not helpful in online learning. The student response about open-ended discussions, response number 6 (See Table 19), made specific reference to not being comfortable sharing their opinion with people that they have not seen, or talked to, before. Student response number 5, discussed the negative impact of when the resources and content are not available at the beginning of the term more than a week out. The student reported this created "a lot of stress" and also reported how this impedes the student's ability to work ahead and organise their learning. Student response number 8 referenced how they find it difficult that they are unable to speak to the teacher in person. The remaining comments are self-explanatory.

Table 19
Student Responses to Question C8

Student	Response
1	YouTube
2	Broken Links
3	Streaming
4	PowerPoint lectures
5	Delay in accessing work
6	Open discussions
7	Textbook learning
8	No face to face
	Remaining students reported no barriers

In summarising this section, a number of enablers were identified, such as the importance of high-quality resources, the tools students find most helpful, and the most helpful resources and content in general. Equally in this section of the survey a number of barriers have been identified such as broken links, streaming issues and PowerPoint lectures, see Table 20.

In this section of the survey there is a fairly even spread of student responses related to enablers and barriers. It is interesting to note how many teacher related issues were identified, but it is not surprising as this section relates to the resources and

content that are used in online learning, which are, for the most part, the responsibility of the online teacher. Without drawing conclusions, the significance of the online teacher is evident at this early stage, specifically, the teacher decisions that are made in the construction and utilisation of the online learning space. This is discussed at length in *Chapter Five: Discussion & Conclusions.*

Table 20
Summary of Section C, Resources and Content

Barriers	Teacher/student	Enablers	Teacher/student
YouTube	Teacher	Quality of resources	Teacher
Broken links	Teacher	Multimedia	Teacher
Streaming	Student	Internet speed	Student
PowerPoint lectures	Teacher	Video resources	Teacher
Delay in accessing work	Teacher	Email & PowerPoint	Teacher
Textbook learning	Teacher	Webinar	Teacher
No auditory communication	Teacher	Digital folders	Teacher
		Dot point notes	Teacher

4.2.1.2 PHASE ONE SOCIALISATION AND COMMUNICATION

The next section of the anonymous survey asked students eight questions (D1 – D8) about the socialisation and communication within their online course with both Likert-style and open-ended questions that yielded twenty-one individual data items to be analysed.

When asked to rate the socialisation opportunities within their online course, student responses were quite varied with most students indicating the use of webinars, receiving feedback from teachers, and receiving help from their peers, as the top responses (D1). Sixty-four per cent of students had the opportunity to engage in weekly live sessions such as webinars with only 21% indicating that they *never* or *not very often*, had access to them (SQ001). When asked about receiving feedback from their teachers 64% reported they received feedback *very often* or *often* (SQ005). Of note was the 67% of students that reported they *never* or *not very often* have the opportunity to engage in online group work which could be a missed socialisation opportunity (SQ004). This is discussed further in *Chapter Five: Discussion & Conclusions.*

Students were asked to rate the quality of the socialisation opportunities in their online course (D2). When asked about their communication with their teacher 71% rated the quality of their communication with their teacher as *very high* or *high* (SQ002). Students expanded further on this in the follow up focus group sessions where they explained the importance of the communication being more than just about the schoolwork (6.1.2.1). This is discussed further in the phase two data analysis. There was a lot lower response when students were asked about their communication with their peers with only 43% of students reporting peer communication as *high* or *very high*. Additionally, 36% of the students rated communication with their peers as *low* or *very low*. When asked about ways in which students initiate communication with their teacher, 86% of the students choose email (D2) which supports the findings from the previous section (C3) where 73% of the students indicated email as being most helpful tool (SQ002). When asked about their communication with the support staff related to their online course, the results were evenly distributed with 36% rating it as *very high* and *high,* and equally 36% rating it as *low* or *very low* and the remaining students remaining *neutral* (SQ004).

Students ranked their preferences towards communication modes, ranking video conferencing/Skype as their number one preference, followed equally by email and face-to-face (home visits, or visits to the distance education campus) (D4). Email was also identified as the main method of communication between the online teacher and the student's parent/carer with 79% of the students indicating this as the main mode, and 50% of the students indicated that the next most popular mode of communication was the phone (D5). When asked to identify the barriers with regards to socialisation and communication in their online course students had a range of responses, with 14% of the students reporting that they had no issues (D7). The biggest challenge identified by 29% of the students was the time delay between when a student asks a question and when they receive the answer. This issue was expanded on further in the follow up focus groups, with students discussing the challenges faced while they wait for the reply (1.1.2.2 & 4.1.2.1). Time delays are discussed further in the phase two analysis, and further explored in the next section where students specify what they do while waiting for replies (E7). Of particular interest was one student's response to the barriers. This student cited a learning disability in their response, indicating their personal challenge in participating in web

conferences, and their choice not to participate in these, instead using forums for socialisation and communication opportunities because of their own anxiety (ID17).

Students found teacher time, forums, webinars and multimodal assessments helpful with regards to socialisation and communication in their online course (D8). Twenty-five per cent of students shared that what they found most helpful in their online course was teacher time. The same percentage shared that they found the forums and discussions helpful for socialisation and communication, and 17% of the students found the webinars most helpful.

In summarising this section of the survey there are a number of enablers with regards to socialisation and communication as well as barriers as shown in Table 21. In this section of the survey the majority of student responses related to enablers with the majority of the issues being related to teachers, or teacher decisions in how they deliver their online course. While it could be argued that communication is the responsibility of both parties, it is interesting to note that most of the socialisation and communication issues related to the teachers, with only three issues resting with the students.

Table 21
Summary of Section D, Socialisation and Communication

Barriers	Teacher/student	Enablers	Teacher/student
No online group work	Teacher	Weekly live sessions	Teacher & student
Delay in teacher replies	Teacher	Assistance from peers	Students
Time to draft posts	Student	Communication with teachers	Teacher
		Use of email	Student
		Use of video/Skype	Teacher
		Use of Forum/Blog	Teacher
		Face to Face (visits)	Teacher
		Teacher time	Teacher

4.2.1.3 PHASE ONE TEACHER-STUDENT RELATIONSHIP

Students were asked nine questions about their perceptions of the teacher-student relationship and through open-ended questions, and Likert-style questions, an additional twenty-one pieces of data (E1–E9) were collected. Seventy-one per cent of the students identified only having one online teacher (E5), which should be kept in mind while reading this data. It might be argued this data set is limited, from the

student's point of view, having had only one online teacher compared to students who have had a number of online teachers, and a broader experience to draw from.

When asked if students felt the online teacher gave them clear expectations about the work, only 50% of the students felt those expectations had been made clear (E1). When asked if they felt they could count on teachers when students need help, 57% of the students felt they could count on them (SQ003), and 50% of the students identified as having a good rapport with their online teacher (SQ004). The same percentage of students also identified that their online teacher checks that students understand the work they are doing (SQ002).

In an open-ended question, when describing the type of support students were getting from their campus supervisor (if they are a school-based student taking an online course) or from their home tutor (for home-based learners), students reported that encouragement, answers and feedback were their main experience of support. Twenty-nine per cent of the students agreed that their biggest support from their supervisor was helping with answers to their questions (E3). Twenty-one per cent of the students reported the support they received from their supervisor was giving feedback and the same percentage of students also reported that encouragement was the other way they received support from their supervisor.

When discussing their experience of webinars (E4), 74% of the students reported that during their webinars the teacher did all the talking (SQ001). Seventy-one per cent of students said that they had the opportunity to ask questions in their webinar (SQ008) and the same percentage reported that during webinars the teacher explains the assignments (SQ002) or uses multimedia to present content (SQ003). Sixty-four per cent of the students said their online teacher asks individual students questions during webinars (SQ006). During webinars 84% of students reported having technical problems (SQ010), which is a consistent outcome in Section F where students were asked to identify the three biggest problems: 79% of the students reported technology issues as one of their top three issues (F5, SQ004). Students were asked about the regularity with regards to getting an answer to their questions. Fifty per cent reported getting an answer within the same day and 29% reported that they received an answer within a couple of hours (E6). When asked what students do

while they wait for the reply, half of the students went on with other school work, while 21% of the students worked on the same subject, but different work, and 14% of the students asked their supervisor for help (E7). As stated in the previous section this issue is explored further in the phase two analysis.

As with the previous sections of the survey the last two questions related to the enablers and the barriers students perceived with regards to the teacher-student relationship. The barriers identified included no oral communication and no face-to-face component (E8). The other significant response from the students was 14% of the students reported that having no oral (auditory) communication was a barrier for them in their online course. Twenty per cent of students reported they experienced no barriers at all with regards to the teacher-student relationship. When asked about what the students found helpful in building the teacher-student relationship with their online teacher, in an open-ended question with no prompt towards communication, 64% of the students identified communication as critical to the online teacher-student relationship, and 29% of the students said that care was important to the online teacher-student relationship (E9). The remaining response was one student, who said that it was the student's responsibility to encourage the online teacher and placed the onus on the students in the development of the online teacher-student relationship.

In summarising this section of the survey there are more enablers with regards to socialisation and communication and several barriers identified, see Table 22. In this section, much the same as the previous survey sections, the majority of actions relate to the teachers, or teacher decisions about how they deliver their online course. This highlights at this early stage the importance of the role of the online teacher, as the evidence builds from the student's point of view of what really is helpful and what is making online learning harder. This is discussed at greater length in *Chapter Five: Discussion & Conclusions.*

Table 22
Summary of Section E, Teacher-student Relationship

Barriers	Teacher/student	Enablers	Teacher/student
Teacher talking most of the time	Teacher	Reliability of teacher	Teacher
Students never present	Teacher	Providing feedback	Teacher
Waiting for an answer	Teacher	Providing answers/explains	Teacher
No oral communication	Teacher	Provides encouragement	Teacher
		Asks individuals questions (during live sessions)	Teacher
		Same day reply	Teacher
		Do other work (while waiting for reply)	Student

4.2.1.4 PHASE ONE GENERAL ONLINE LEARNING QUESTIONS

The final section of the survey explored general questions of student perceptions of online learning. Students were asked 10 questions which provided twenty-five individual data items (F1–F10). When asked if the students preferred online learning to face-to-face classes, the question isolated a number of students who have only ever been home-schooled (F1). These students were removed from the count so the following data accurately reports the comparison of a face-to-face class and an online class. There was an even three way spilt among how students felt about the comparison with 33.3% of the students found online learning either harder, or much harder, 33.3% reporting about the same level of difficulty and the final 33.3% reporting that the online class was easier than their face-to-face experience (F1).

In the second question of the final section students were asked to rate the significance of several factors related to online learning such as technical support, time to engage with their course, and the range of learning experiences utilised in their online course (F2). Ninety-two per cent of the students reported that having enough time to engage in the course was one of the most important factors. The second most important topic to students was receiving assistance from their online teacher with 86% of the students rating this as *very important* or *extremely important* (SQ003). When indicating the importance of support from the home tutor only 57% of the students indicated this to be as important. Seventy-nine per cent of the students identified orientation into online learning as *very important* to *extremely important* (SQ005) and 71% rated access to technical support as the same level of importance

(SQ001). Students also reported on receiving high levels of support from their online teacher, with 57% of the students rating online teacher support as high.

When asked about motivation in online learning, the students rated their motivation low. Only 29% of the students expressed motivation towards online learning, and 50% of the students rated neutral about their motivation. While there were low levels reported on student motivation, 64% of the students identified that online learning is an effective method of learning (SQ003) and 71% of the students felt that they understood their responsibilities in online learning (SQ001). It is interesting to note that while motivation is being identified as a problem by half of the students, 66% of the students said they preferred blended or online learning over face-to-face learning (F6).

When asked about what students did in a typical week, 71% of the students *never* or *rarely* had opportunity for face-to-face with their online teacher, and for students studying from a traditional school context 36% *never* or *rarely* got assistance from a campus-based teacher. When asked about what problems students have experienced in their online course, 79% of the students reported technical problems, with 57% of the students identifying connectivity issues as a problem (F5). Sixty-four per cent of the students reported that time and understanding the work were issues, with 64% of the students accessing websites recommended by their teacher. When asked through an open-ended question what students enjoyed, 36% of the responses indicated that the students really enjoyed the self-paced opportunity that online learning affords. Additionally, another 21% said they really enjoyed the autonomy experienced in online learning.

The final three questions of the online survey, much the same as the previous sections explicitly asked the students what general barriers they experience in online learning, and what general things helped them in their online learning (F9 & F10). When asked, generally speaking, what barriers students faced with online learning, 29% of the students identified socialisation and communication as an issue, which supports the inclusion of socialisation and communication as one of the main themes for the current research.

Additionally, 21% of the students identified technology as an issue and like the previous observation it is important that resources and content were included as a main theme for the current research. When asked, generally speaking, what helps with online learning, 36% of the answers to the open-ended question related to teacher actions, or teacher decisions about how they deliver their course, such as feedback, the layout of the course and the support offered by teachers (F9). Another notable factor was that 36% of the students identified that their own self-management was key in their success in online learning. The final question asked students what they wish they knew before they started their online course, with 43% of the students identifying "nothing" as their response. The remaining responses showed no trend, or themes, and can be found in Table 23.

Table 23
Student Responses to Question F10

What students wished they knew prior
Familiarisation with Online Learning
Freedom
No face to face
How hard it would be
How it is so accessible
How you can miss some lectures

In summarising the final section of the survey, the enablers to online learning outweigh the barriers, see Table 24. In this section, there is a more even spread regarding what issues relate to teachers and what relates to students.

Table 24
Summary of Section F, General Online Learning Questions

Barriers	Teacher/student	Enablers	Teacher/student
Technical problems	Teacher	Having time to work	Teacher & student
Understanding work/task	Teacher	Teacher Assistance	Teacher
No socialisation	Teacher	Orientation to OL	Teacher
		Self-paced work	Student
		Autonomy	Student
		Self-management	Student

The following section presents the results of the phase two analysis and provides the remainder of the background required for discussion in *Chapter Five: Discussion & Conclusions.*

4.3 PHASE TWO DATA COLLECTION AND ANALYSIS

Phase two data collection was done in focus groups, which allowed for an expansion of the phase one data collection (Creswell, 2014).

4.3.1 PHASE TWO DATA COLLECTION

The data from phase one informed the design of the phase two focus group questions (see Appendix G). During the focus groups, participants provided further data from their initial responses to the quantitative phase one survey. These sessions used audio recordings for each focus group made with a portable MP4 recording device, that provided opportunity for deeper reflection, accuracy and analysis. Pertinent insights and quotes were transcribed and used in the data analysis, and during transcription student identities were kept anonymous.

The follow-up focus group sessions were scheduled to be delivered virtually, and undertaken using a web-based tool, so that students could access the virtual focus groups via their school's internet system, or from home. As well as focus group questions designed from the phase one data analysis, students were also given a final open question where they were able to provide any additional information that might not have been collected during the phase one survey.

As with the phase one data collection, there was a very low participation rate in phase two. It was anticipated that at least 50% of the students who competed the phase one anonymous survey would take up the opportunity to provide additional information through the focus groups. Unfortunately, securing student participation in the phase two follow-up focus group sessions proved to be challenging. Five attempts were made to provide students with opportunities to engage in the follow-up focus groups. Strategies employed were offering different school days, different times of the day, and even the opportunity to participate via phone conference if they did not want to participate in a web-conference-style focus group (based on one student's reply about web conferencing from the phase one data). During these attempts to engage the students in follow-up focus groups, the main method to communicate with students was via email. Participation in the research was voluntary, and students could opt in or out for phase two.

Unfortunately, only 27% of the students participated in the focus group sessions. This is a concerning percentage given the 27% equates to only four students. Due to the geographic spread of the student participants, individual webinars were set up to provide for an avenue for students to participate in the follow up focus groups. At each session the same four questions were asked, with each focus group session providing an opportunity for students to say something that might not have been touched on during the survey, or through the three focus group questions. Regardless of the context of the student's participation in the focus group, all responses were recorded and coded to ensure the anonymity of the participants.

It is important to note that due to such a small sample size caution is required when considering the data, the conclusions may not be generalisable to the wider population but might be interpreted for some settings. While the sample size is small, the discussion below does validate a number of key findings from the phase one collection, provides more insight into the barriers and enablers to inline learning, and is useful in understanding what further research might be helpful in furthering understanding the subject.

4.3.2 PHASE TWO ANALYSIS

Phase two data analysis employed a Thematic Analysis (TA) method through the use of text coding and theme development (Creswell, Plano Clark, & Garrett, 2008). The thematic analysis was used to interpret the qualitative data and allowed for the subsequent interpretation and explanation of the qualitative and quantitative data (see Appendix D). TA is a recursive process where the researcher moves back and forth between different phases (Clarke & Braun, 2013). The analysis process chosen for the phase two data analysis is Braun and Clarke's six phases, see Table 25.

Table 25

Braun and Clarks Six Phases		*Chapter*
Phases	Activity	
1	Familiarising yourself with the data	Four
2	Generating initial codes	Four
3	Searching for themes	Four
4	Reviewing themes	Four
5	Defining and naming theme	Four
6	Producing the report	Five

(Javadi & Zarea, 2016)

During the initial steps 1–3 of Braun and Clarks' six phases, a pattern was identified. It was observed that the responses from the students related directly to either teachers or students. Additionally, it was noted that the responses under these categories could be articulated as an enabler or a barrier and as discussed previously, that the data related to either a teacher action/decision or a student action/decision and was arranged accordingly. Figure 5, *Theme Development and Coding Method*, demonstrates how the data was organised.

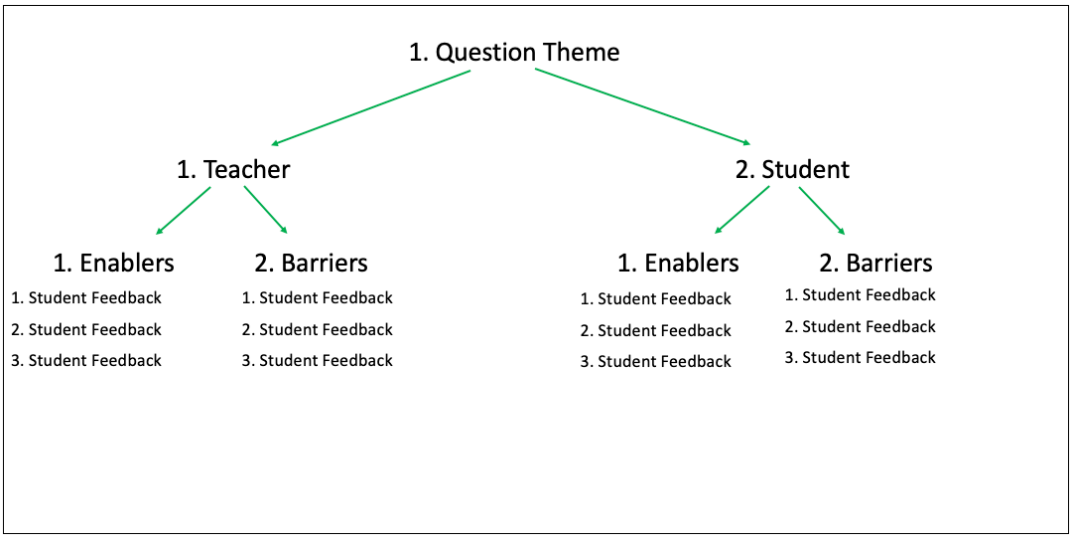


Figure 5. Theme Development and Coding Method

The data was organised for an initial analysis, which included the transcribing of the focus group sessions. The focus group sessions were recorded and transcribed for accuracy to maintain the integrity of student voice. Transcribing the focus group sessions ensured the accurate reporting of different points of view and assisted the researcher in remaining objective and maintaining the integrity during the analysis of the phase two data (John, 2013).

The next step was to undertake a thematic analysis of the focus group session transcripts which involved chunking the data and coding the student responses. Qualitative coding is, most often, a word, or short phase, and can have a preliminary code assigned to it before the final code is attributed to the data (Saldana, 2015).

The second stage of coding used a Descriptive Code to label the key words that summarised the themes from the focus group sessions. These themes were then classified as either an enabler to online learning, or a barrier to online learning, and

attributed as an issue related to either the online teacher, or the online student. Organising the data in this way provided a consistent method to analyse the four focus group questions, and utilised the same four considerations, barriers, enablers, teachers, students as the phase one analysis. Further, using enablers, barriers, teachers and students facilitated the identification of patterns between the phase one and phase two responses as they related to the barriers experienced, the enablers, what dynamics relate to teacher choices/actions and dynamics that related to the student's choices/actions. The following section discusses findings of the phase two analysis are discussed below and *Chapter Five: Discussion & Conclusions* provides a detailed analysis of the patters between the two phases in light of other similar studies.

4.3.3 PHASE TWO SOCIALISATION AND COMMUNICATION

In the phase one section, socialisation and communication, students were asked to rate the quality of the socialisation in their online course. Seventy-one per cent of the students identified that the quality of their communication with teachers was very high, but only 43% responded to the same questions in relation to their peers (D2). In addition to this observation it was noted that 67% of the students referenced that there was no opportunity for online group work (D1). It was identified that this subject needed further exploration. During the phase two focus group sessions students were asked, "*What do you think might explain the decrease of importance of socialisation and communication with peers?*".

The students talked about how they felt the need to engage with their teacher was a much higher priority (1.1.1.1) than with their peers (1.2.2.1) and if they did know the students really well, then they were willing to engage with their peers (1.2.1.1), as shown in Table 26.

The second theme that was identified from the phase one data was the students identifying the negative impact that delay in replies had on their socialisation and communication in their course. During the focus group students were asked, "*There*

were many references to time delay, can you tell us a bit more about what the time delay issue might be and what impact this has in communication in an online course?".

Table 26
Student Responses to Question 1a

Phase one coding	Student Quotes	Enabler/Barrier
1.1.1.1	"Because I guess I would trust them (teachers) a bit more than the students…"	Enabler
1.2.1.1	"The only time I really have contact with students is if I know them really well…"	Enabler
1.2.2.1	"It wasn't really about the interactions with other students, I'm more needing to make contact to teachers…"	Barrier
1.2.2.2	"So contacting students wasn't really a priority with me…"	Barrier
1.2.2.3	"You don't have the same connection though that text-based socialisation…"	Barrier

In response to this question students highlighted that the relevance of the teacher was a factor in socialising and communication with their teacher (1.1.1.2). One student reported that they received quick responses from their teacher (1.1.1.3) whereas other students felt a lack of support from their online teacher (1.1.2.3) because of the delays in the replies to questions (1.1.2.2). Another student felt they had no connection with their online teacher (1.1.2.1) and that their online teacher had no personality (1.1.2.4). One student explained that their communication with their teacher has high quality (D2) because they would start their work early and then they were able to access the teacher more easily as at that time other students were still completing the work assigned resulting in the student not completing with other students for the teacher time (1.2.1.2), see Table 27.

Table 27
Student Responses to Question 1b

Phase one coding	Student quotes	Enabler/Barrier
1.1.1.2	"I'm more needing to make contact to teachers…"	Enabler
1.1.1.3	"I can email my teachers and they're responding within the day…"	Enabler
1.2.1.2	"I always try to start them a week or so early…"	Enabler
1.1.2.1	"I didn't personally feel very connected…I just didn't feel comfortable…"	Barrier
1.1.2.2	"I'm waiting on responses and I can't really go on…"	Barrier
1.1.2.3	"I felt a lack of support…"	Barrier
1.1.2.4	"Had no personality, felt like I might as well have been reading…"	Barrier

After the first phase of coding, the responses were coded again to articulate the main themes, these are outlined in *Figure 6 Socialisation and Communication*, using the Theme Development and Coding Framework. *Figure 6 Socialisation and Communication* presents the combined student responses to the two socialisation and communication questions.

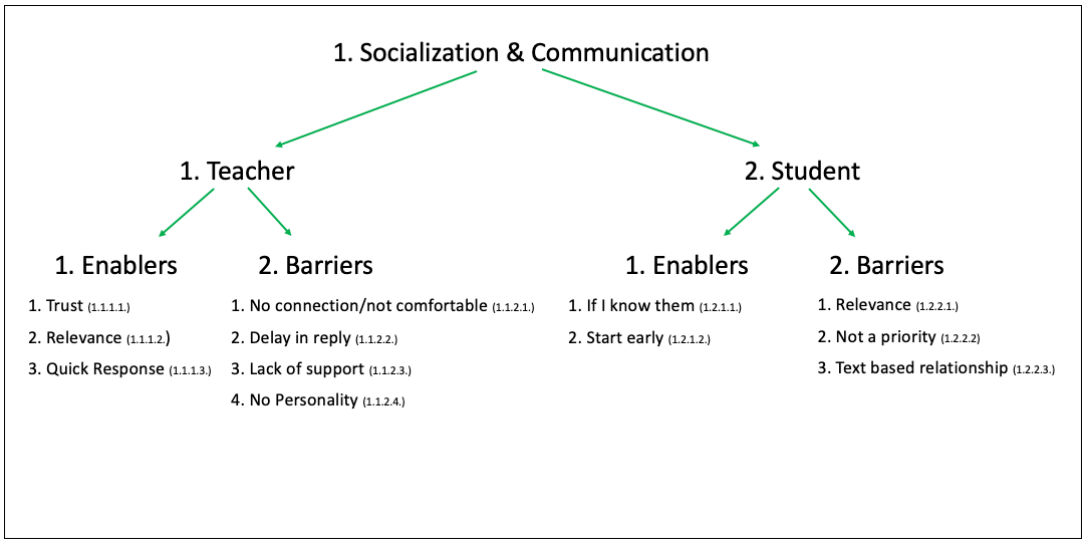


Figure 6. Socialisation and Communication

Table 28
Main Themes from Question 1

Main Theme	Student's Response	Code	Enabler/Barrier
Teacher Responses	"I can email my teachers and they're responding within the day…"	1.1.1.3	Enabler
	"I'm waiting on responses and I can't really go on…"	1.1.2.2	Barrier
Relationships	"Because I guess I would trust them (teachers) a bit more than the students…"	1.1.1.1	Enabler
	"Because I guess I would trust them (teachers) a bit more than the students…"	1.2.1.2	Enabler
	"I didn't personally feel very connected…I just didn't feel comfortable…"	1.1.2.1	Barrier
	"Had no personality, felt like I might as well have been reading…"	1.1.2.4	Barrier
	"You don't have the same connection though that text-based socialisation…"	1.2.2.3	Barrier
Relevance	"I'm more needing to make contact to teachers…"	1.1.1.2	Enabler
	"It wasn't really about the interactions with other students…"	1.2.2.1	Barrier
	"The only time I really have contact with students is if I know them really well…"	1.2.1.1	Enabler
	"So contacting students wasn't really a priority with me…"	1.2.2.2	Barrier

When analysing the first phase of coding and the second phase of coding in Figure 11, three main themes appear. The main themes from Question 1 are; Teacher

Responses, Relationships and Relevance. Table 28 Main Themes from Question 1, organises the main themes with the relevant student responses. These main themes are discussed further in *Chapter Five: Discussion & Conclusions.*

.4 PHASE TWO TEACHER-STUDENT RELATIONSHIP

Question two was developed to further explore how to strengthen the teacher-student relationship in an online context. In the anonymous survey 64% of the students reported how communication contributed to a positive online teacher-student relationship. Question two was designed to ask what teachers could do to improve the online teacher-student relationship and what students could do to improve the online teacher-student relationship. Students were asked, "What could teachers do to build stronger relationships in online learning?" and "What do you think students can do to help build a stronger teacher-student relationship?".

In their responses to what teachers could do to improve the teacher-student relationship students discussed how feedback could be more personalised (2.1.1.2) and that the feedback on assignments could be more than just "grammerly". Another student referenced the need for there to more of a "personal touch" (2.1.2.1). Another student said that teachers could be more proactive with building the teacher-student relationship and suggested that on excursions teachers could get to know the students more and ask questions outside of just school issues (2.1.1.1). One student referred to not being comfortable enough to make the first step (2.1.1.5) in establishing interaction with the online teacher and even found the ideas of making a phone call to the teacher "intimidating" (2.1.2.2)

When asked what students could do to help improve the teacher-student relationship students suggested that online students could ask questions (2.2.1.1) and not be concerned if their question is "stupid" or not (2.2.2.1). Another student said that students could make it a priority to try to attend webinars (2.2.1.2). While it was not a suggestion for students to do, one student discussed how helpful a student-initiated group messenger chat was in their online course (2.2.1.3). Figure 7 *Teacher-student Relationship* presents the combined student responses to the two teacher-student questions.

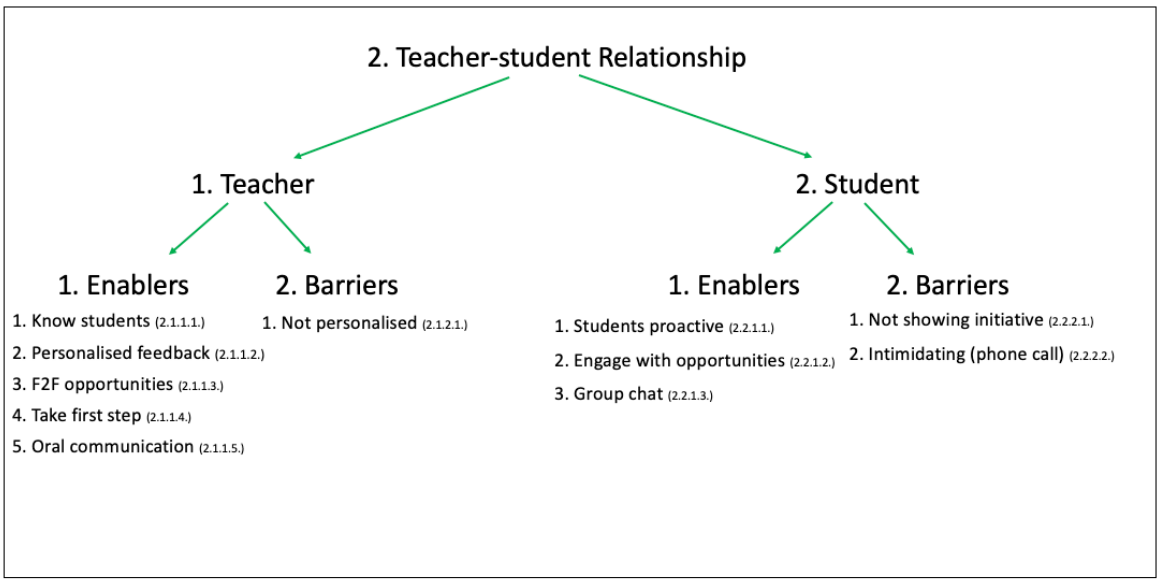


Figure 7. Teacher-student Relationship

When analysing the first phase of coding and the second phase of coding two main themes appear. The main themes that developed from Question 2 are, Personalisation and Initiative. Personalisation refers to the students' desire for their online learning experience to be personalised to themselves. With regards to initiative, this included teachers' and students' actions with feedback from students about the teachers taking the initiative to get to know the students and students taking the initiative and participating in the opportunities within their course such as participating in webinars. Table 29 organises the main themes with the relevant student responses. These main themes are discussed further in *Chapter Five: Discussion & Conclusions.*

Table 29
Main Themes From Question 2

Main Theme	Student Quotes	Code	Enabler/Barrier
Personalised	"Make the effort to get to know them (students) bit more."	2.1.1.1	Enabler
	"…do good personal feedback."	2.1.1.2	Enabler
	"There was no personal touch…"	2.1.2.1	Barrier
	"…so audio is the next best thing."	2.1.1.6	Enabler
Initiative	"Ask questions, don't be afraid."	2.2.1.1	Enabler
	"…students think they shouldn't ask a question because it's a stupid question…"	2.2.2.1	Barrier
	"…make it a priority and make an effort to attend every week."	2.2.1.2	Enabler
	"…that's an intimidating thing."	2.2.2.2	Barrier
	"…be the one to take the first step…"	2.1.1.5	Enabler
	"…set up our own group messenger chat…"	2.2.1.3	Enabler

4.3.5 PHASE TWO RESOURCES AND CONTENT

During the analysis of the phase one data, it was identified that 73% of the students use web conferencing yet only 40% of the students reported them to be helpful with their online learning. Given 73% of the students are engaging with web conferencing, web conferencing was chosen as the subject to explore for resources and content during the focus group sessions. All the students who participated in the focus group sessions engaged with the web conferencing within their respective courses.

Students reported some technical issues with web conferencing with difficulties experienced with streaming (3.1.2.1) with one student suggesting schools need to "iron out the kinks" (3.1.2.1). One student talked about how convenient the technology was in that after the session they were able to review the session again (3.2.1.1). In the remaining discussion it was evident that one student had negative experience with the web conferencing with the other students talking about a more positive experience. One example of the negative aspects was one student who said they were unable to interrupt their online teacher during the sessions (3.2.2.1) and that the teacher misunderstood them when making posts during the session and that the teacher should have checked for understanding (3.1.2.3). The same student also discussed how when they did ask for clarity, that the teacher just repeated what they had previously said without providing any further explanation of the subject.

The remaining students discussed some of the advantages of the web conferencing such as being able to get instant answers to questions during the session through the use of the chat function (3.1.1.3). They also discussed how they enjoyed the recordings as they provided more details about their work (3.1.1.1). They suggested that more frequent webinars be offered and that teachers could offer these with extra time dedicated to looking at assessment tasks (3.1.1.2). They also suggested that online teachers could also provide some examples of what is being asked of the students (3.1.2.2). *Figure 8 Resources and Content* presents the combined student responses to question number three.

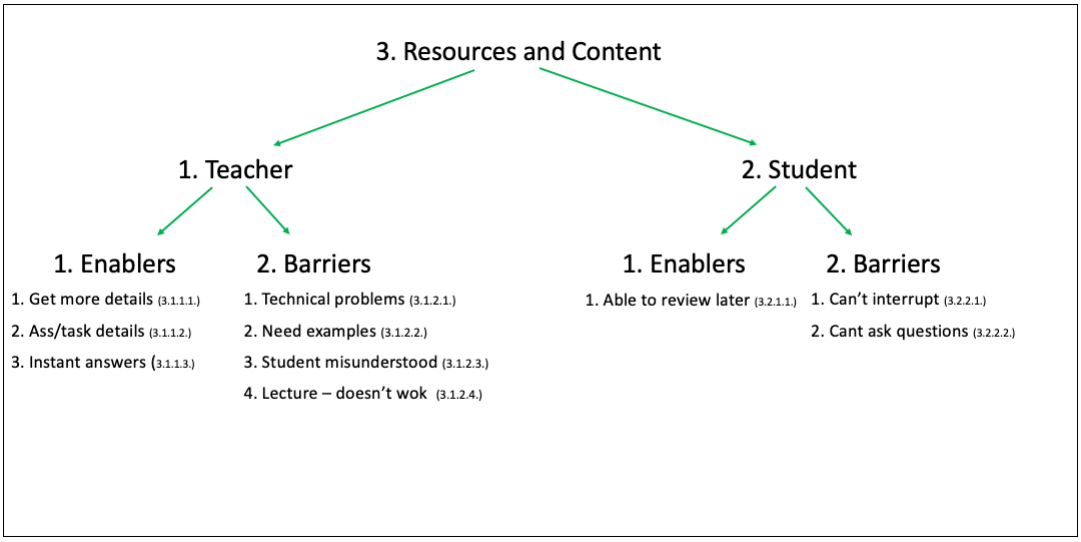


Figure 8. Resources and Content

When analysing the first phase of coding and the second phase of coding the two main themes, pedagogy and technology were identified. All student responses could be assigned to one of these themes. The first theme, pedagogy, related to student feedback and to teacher delivery decisions such as allowing students to ask questions (3.1.1.1), checking for understanding (3.1.2.3) and providing students with instant answers through the chat function (3.1.2.3), all arguably pedagogical decisions. The technology feedback related to the problems students faced and the advantage of being able to play back the live session. Table 30 presents the main themes with the relevant student responses. These main themes are discussed further in *Chapter Five: Discussion & Conclusions.*

Table 30
Main Themes From Question 3

Main Theme	Student Quotes	Code	Enabler/Barrier
Pedagogy	"Having at the end an example of what needs to be done."	3.1.2.2	Enabler
	"…lecture recording program in itself doesn't run very well…"	3.1.2.4	Barrier
	"…we couldn't really interrupt the teachers…"	3.2.2.1	Barrier
	"…you just use the chat bit…"	3.1.1.1	Barrier
	"…having more regular webinars…example of what needs to be done."	3.1.1.2	Enabler
	"…each assessment tasks has like a 20-minute video…"	3.1.1.3	Enabler
	"…ask them straight away and they respond (chat tool)…"	3.1.2.3	Enabler
	"…or they may be misunderstood what I've written…"	3.1.2.3	Barrier
Technology	"…had problems loading and things like that…"	3.1.2.1	Barrier
	"… you can more easily (recordings) come back to them."	3.2.1.1	Enabler

4.3.6 PHASE TWO GENERAL OPEN-ENDED QUESTION

The final question for the follow-up focus group session was a question that was designed to provide one final opportunity for participants to provide any other pertinent information about the students experiences of online learning. Students were asked, “Is there anything else that we need to know about as we try to deliver material online to you people?”.

Students were very engaged with this final question during the interviews and gave a number of suggestions for online teachers to consider. Students encouraged teachers to make the online learning experience more interactive (4.1) and to try to make it enjoyable for students (4.2). They also expressed that they would find more interaction with teachers helpful (4.3). Students also raised again that when there are opportunities for excursions and other face-to-face interactions, teachers make the extra effort to get to know the students (4.4), and to ask the students about their general day-to-day schooling experience, rather than just the subject they are teaching (4.5). Another participant suggested online teachers provide more support (4.6), reach out to students (4.7), and to follow up when students make enquiries (6.8). The final participant also asked for more interactive activities (4.8) and shared about their struggle in not having a relationship with their teacher (4.9).
In organising the data for the final question, the Theme Development and Coding Method was not used to organise the student responses. The responses to the final question delivered a number of suggestions for online teachers that are discussed below and are summarised in Table 31. Pedagogy and Relationships were identified as the two themes from the data. The suggestions from the students about teacher related issues were all about pedagogy and related to the curriculum delivery. The second theme, relationships, included suggestions for online teachers about things that students would find meaningful in the development of the teacher-student relationship.

Table 31
Student Suggestions From Question 4.

Main Theme	Student Response	Code	Enabler/Barrier
Pedagogy	"Make it more interactive…"	4.1	Enabler
	"…make it more enjoyable for students…"	4.2	Enabler
	Provide more support	4.6	Enabler
	"…and follow up if they (students) query things."	4.8	Enabler
Relationship	"Also have more interaction with teachers…"	4.3	Enabler
	"…make effort to get to build a relationship with them (students).	4.4	Enabler
	"…like ask how they're (students) week is going and what are your (students) plan."	4.5	Enabler
	"Reaching out to the kids is probably the main thing…"	4.7	Enabler

4.4 SUMMARY OF DATA ANALYSIS

As an MMR research methodology, it is necessary to combine data from the phase one and phase two data collection (Driscoll, 2007). While a full analysis is provided in the following chapter, identified below are the key themes and sub themes which combine the students' responses from phases one and two. This gives an overview of the enablers and barriers, as well as a thorough understanding (Cohen, Manion, & Morrison, 2013) of the issues as they relate to either the teacher actions/decisions, or the student actions/decisions as understood from the student's point of view (Schultz, 2011).

In combining the results from phases one and two, in addition to a greater understanding of the main themes, a number of related sub-themes were identified as shown in Table 32. The response data was organised into eight sub-themes. The section that provided the most responses was the non-themed general questions from the phase two focus groups. It was noted earlier how engaged the students were when invited to provide feedback without any theming. Pedagogy was identified as a theme in the teacher-student data, the resources and content data and was identified in the non-themed general questions. It is not surprising that it was identified in 80% of the students' responses in the resources and content section as the design of the resources and construction of content are pedagogical decisions (Barbour, Adelstein & Morrison, 2018).

Table 32
Key and Sub Themes Overview

Key Themes	Response Totals	Sub-Themes	# of Responses	%	Key Theme Interaction
Socialisation & Communication	13	Teacher responses	3	23%	Teacher-student Relationship
		Relationships	6	46%	Teacher-student Relationship
		Relevance	4	31%	Resources & Content
Teacher-student Relationship	11	Personalisation (Pedagogy & Relationships)	5	45%	Resources & Content
		Initiative	6	55%	
Resources & Content	10	Pedagogy	8	80%	
		Technology	2	20%	
Non-themed General Questions	17	Pedagogy	8	47%	Resources & Content
		Relationships	2	12%	Teacher-student Relationship
		Time	7	41%	Resources & Content

While not articulated as pedagogy in the teacher-student relationship main theme section, personalisation is being included with pedagogy as personalisation is about teaching and learning and more explicitly about making teacher judgements in personalising the curriculum to individual student needs to maximise student success (Engle & Livengood, 2019). Relationships were identified as another sub-theme and was identified in the socialisation and communication, teacher-student relationship and the non-themed general question sections. The remaining sub-themes were unique to the section that they were identified in and the sub-themes of time and initiative (student's initiative) received the highest rate of representation of student voice.

Table 33
Enablers and Barriers Overview

Main Theme	Total Responses	Enablers	%	Barriers	%
Socialisation & Communication	23	13	57%	10	43%
Teacher-student Relationship	22	15	68%	7	42%
Resources & Content	25	13	52%	12	48%
Non-themed General Questions	26	15	58%	11	42%

When combining student responses on the enablers and barriers in online learning there was an even representation of these across all main sections, see Table 33. It is also noteworthy that the majority of responses from students were in relation to enablers.

When combining the student responses related to teacher actions/decisions there is a total of 62 data points. The majority of the responses related to teacher actions/decisions were identified in the main section resources and content, which is to be expected, much the same as has previously been stated about the pedagogical decisions teachers make in the construction of their courses (Barbour, Adelstein & Morrison, 2018).

The combined data on student actions/decisions provided a much smaller data set with less than half the combined data that the teacher actions/decisions received, see Table 34. There was a fairly even spread of student responses across all four areas with higher response rates in the phase two data.

Table 34
Teacher Action/decision Overview

Main Theme	Research Phase	Number of responses	% of Total	Teacher Action/decision	%
Socialisation & Communication	1	12	19%	7	58%
	2			5	42%
Teacher-student Relationship	1	16	26%	10	62%
	2			6	38%
Resources & Content	1	20	32%	13	65%
	2			7	35%
Non-themed general Questions	1	14	23%	5	36%
	2			9	64%

This is highlighted in the teacher-student relationship section where there was 84% of student response data from the focus groups. It is important to highlight again that while 84% responses from the focus group is a high percentage, the focus groups are only representative of four students compared to the sixteen participants from the phase one data.

The final combined data set is a comparison of the teacher actions/decisions and the student actions/decisions in Table 35. There is an even distribution of response data

across all main themes and much the same in the previous sections the largest teacher action/decision in the resources and content.

Table 35
Teacher-student Action/decision Comparison

Main Theme	Total Actions/ decisions	Teacher Actions/ decisions	%	Student Actions/ decisions	%
Socialisation & Communication	21	12	57%	9	43%
Teacher-student Relationship	22	16	72%	6	28%
Resources & Content	25	20	80%	5	20%
Non-themed General Questions	23	14	60%	9	40%

The highest response rate related to student actions/decisions was from the non-themed general questions and included student related issues such as student self-management (F9), time management (F5, SQ003 and F2, SQ002) and students accessing webinars (4.2.1.6.). While the majority of the response data is from the teacher actions/decisions theme, one unexpected outcome of the research is the student actions/decisions such as when one student shared how they start early to provide them with greater access to the teacher later in the course (1.2.1.2.) and when another student referenced the need for students to use their initiative and access the webinars (4.2.1.6.).

4.5 CHAPTER SUMMARY

This chapter restated the purpose of the research, the methodology for the data collection and analysis methodology. It also discussed the difficulties experienced by the researcher in securing participants and positioned the research in the context of the historic education reform occurring in Queensland at the time of the data collection. The impact of this challenge was discussed including the impact it had on the research methodology, specifically, the need to change the data analysis methodology for the phase one quantitative data from descriptive statistics to discourse analysis because the sample size was too small for a quantitative study.

The findings were organised by the key themes of the research, resources and content, socialisation and communication, teacher-student relationship and a final

category of general online learning questions. These findings were framed using a Theme Development and Coding Method unique to the current study. Two constructs were explored within the key themes of the research, barriers to online learning and enablers to online learning. The results were presented through this framing and applied to actions/decisions teachers made, or actions/decisions students made towards online learning. The key themes were summarised and these findings become the basis for the reminder of the discussion in the next chapter.

Chapter Five: Discussion & Conclusions, discusses these findings and analyses these results in light of other K–12 online learning studies and online learning theory. It concludes with a discussion on the theoretical underpinnings of the current research and provides recommendations for areas of further research.

CHAPTER FIVE: DISCUSSION AND CONCLUSION

5.1 INTRODUCTION

This chapter discusses the findings of the study using theoretical underpinnings of K–12 online learning to interpret the findings. It provides the background of the study, with a summary of the pertinent literature and findings as presented in *Chapter 4: Results*. Following the overview, the discussion turns to framing the findings through a theoretical perspective of K–12 online learning. Finally, the chapter concludes by stating the contributions of the research, providing recommendations for further research, and discussing the limitations of the study.

5.2 CONTEXT OF THE STUDY

The context of the study was to investigate a group of Queensland senior secondary student perceptions of the enablers and barriers they face when engaging in online learning (Appendix A). Participants were senior secondary students, Year 10 –12, who were undertaking some form of online learning as a part of their Senior Education Training Plan (SETP) in fulfilment of their Queensland Certificate of Education (QCE). This research explored Queensland regional, rural and remote student perceptions of the enablers and barriers they experience in online courses. Student participants were studying at least one of the following course types: Authority Subjects (OP or academic subjects), Authority Registered Subjects (SAS or vocational subjects), Vocation Educational Training (VET or certificate qualifications) and, in some instances, secondary students were participating in university early entry programs online, such as The University of Southern Queensland's Head Start program.

5.3 OVERVIEW OF THE RELEVANT LITERATURE

Online learning is taking its place as a prominent player in the delivery of curriculum in schools around the world (Legon & Garrett, 2017). Internationally, research into online learning has predominantly focused on the Higher Education sector but, since the mid-1990s, literature related to Kindergarten to Year 12 (K–12) online learning has been increasingly available (Dichev et al., 2013). Over the past decade there has been an increase in research activity in the K–12 sector with most of this research

activity being undertaken outside of Australia (Shattuck, 2015). Of the material available at an international level, researchers have identified that the research needs to shift its focus from the teacher and organizational perspective to a focus on the student experience of online learning (Halverson et al., 2017).

Compared with the international literature, Australian K–12 online learning research is nascent. Australian Educational Computing reported that research into the K–12 online sector is maintained a steady growth in interest in online learning from 2003 to 2010, with the number of articles peaking in 2010 (Zagami, 2015). There is little evidence in the literature that Australia and Queensland are keeping in step with international K–12 research trends. Although historically Australia has been identified as one of the leaders in leveraging technology's capacities to deliver distance education, a comparison of Australia's research interest with international K–12 activity, shows that by 2014 Australia was already beginning to lag in its understanding of K–12 student participation in online learning (Ferdig & Kennedy, 2014). As a result, Australian educators' understanding of senior secondary students' experience of online learning is nebulous, creating a gap in educators' understanding of the barriers and enablers that Australian secondary students undertaking online learning may be experiencing.

The literature also revealed a need for more research in the area of student voice in the context of online learning (Schultz, 2011), which has been under-represented in published work, with the focus of much of the current literature being from the teacher's point of view (Barbour, McLaren, & Zhang, 2012). This paper addresses the gap in the literature in relation to student voice specifically, in the three key areas identified in the Literature Map (Appendix B): online resources and content; online socialisation and communication; and the online teacher-student relationship. Below is a brief summary of the relevant literature from each of these main themes.

5.3.1 SUMMARY OF RESOURCES AND CONTENT

Research on K–12 online learning identified that additional research is required into what constitutes a well-designed and well-organised course for adolescents (Barbour,

2008), course content and interactive content (Oliver, Osborne, & Brady, 2009), and asynchronous strategies (Barbour & Hill, 2011). Researchers agree about the importance of instructional design strategies and recommend careful consideration of the type of content used in K–12 online learning (Pape & Wicks, 2011). One example of this is where students reported that asynchronous work is unchallenging but during synchronous lessons students were most productive. Researchers agreed that the teacher can made a positive contribution to K–12 online learning (Barbour & Hill, 2011). Researchers recommended that including interactive content and learning activities that are relevant help to improve student engagement (Louwrens & Harnett, 2015). This study investigated Queensland senior secondary students' perceptions of what is helpful (enablers) and what is not helpful (barriers) with online resources and content.

5.3.2 SUMMARY OF SOCIALISATION AND COMMUNICATION

While considerable research into socialisation and communication in the higher education sector has been undertaken (Journell, 2010), at a K–12 level more research is needed into understanding online socialisation (Harvey et al., 2014). A number of themes were identified in the literature related to socialisation and communication. The roles of peers (Pratt, 2018), different forms of communication such as text messaging and social media (Belaire, 2012), and communication among parents, students and teachers require further consideration by researchers (Siko, 2014). There are mixed results on students' attitudes towards peer learning opportunities, such as making online learning easier (Louwrens & Harnett, 2015), but some students found a lack of cooperation hindered peer-peer learning (Quek, 2010). Communication with peers was valued less than communication with teachers and some students found online communication challenging, demonstrating a need to improve communication with teachers and the establishment of communication protocols (Golden, 2014). Student perceptions of social learning were mixed, some students found it meaningful (Trinidad, 2009), with some feeling that social learning gave them a sense of belonging (Louwrens & Harnett, 2015). Others expressed concerns with both synchronous and asynchronous online learning; even though they enjoyed it, they missed social opportunities from traditional education (Golden, 2009). This study expanded understanding of students' perceptions of socialisation and communication opportunities in online learning.

5.3.3 SUMMARY OF TEACHER-STUDENT RELATIONSHIP

Chargois (2013) identified that very little research on teacher-student relationships has been undertaken. Among the few studies available, the role of the teacher in guiding students in online learning (Lee & Park, 2012) and the quality of learner-parent and parent-instructor interactions has been featured (Borup, 2013). Researchers reported a number of barriers to online teacher-student relationships. Individual student ability, a lack of teacher-student interactions (Lee & Park, 2012), lack of teacher monitoring, feedback and facilitation were identified as barriers to developing an online teacher-student relationship (Lang, 2010). The role of the teacher was found to be far more important than that of instructional design, with the student-teacher relationship developed by frequent interactions found to be important for student retention (Chargois, 2013). Researchers also agreed that the approach of the teacher influenced student participation (Dubuclet, Lou, & MacGregor, 2015). This study contributes to the small body of literature on teacher-student relationship and in particular, the students' perceptions of their online teacher-student relationship.

5.4 CONCEPTUAL FRAMEWORK AND METHODOLOGY

The findings of the literature review informed the conceptual framework and provided the overarching direction for the research. This section restates the research question and provides a brief summary of the conceptual framework and methodological approach chosen for the research.

5.4.1 RESTATEMENT OF THE RESEARCH QUESTION

This research investigated Queensland regional, rural and remote senior secondary students' perceptions regarding enablers and barriers to online learning. The main question addressed in this research is

> What are regional, rural and remote Queensland senior secondary students' perceptions of enablers and barriers when undertaking an online course?

The subsidiary questions are:

1. What kind of resource and content factors influence a student's perception of online learning?

2. How does socialisation and communication in online courses contribute to a student's perception of online learning?
3. In what ways does the teacher-student relationship contribute towards a student's perception of online learning?

5.4.2 CONCEPTUAL FRAMEWORK

The research paradigm chosen for the research was a social constructivist approach where the researcher used an ethnographic approach to understand the student's experience of online learning from their perspective. Social constructivism is an extension of constructivism that includes the role of others, in the context of their culture, in the development of ideas and experiences (Woolfolk & Margetts, 2007). This social constructivist approach was selected as it works harmoniously with a mixed-method sequential explanatory methodology and, is a pragmatic methodology (Agerfalk, 2013), that is consistent with the worldview of the researcher who identifies as a pragmatist. This research paradigm facilitated the opportunity to provide student voice to online resources and content, socialisation and communication and the online teacher/student relationship.

5.4.3 METHODOLOGICAL APPROACH

In order to present a rich understanding of senior secondary online students, an adapted version of Creswell's Sequential Explanatory Mixed Methods (2014) methodology was selected to guide the research. The Sequential Explanatory research design (Appendix D) guided the data collection and analysis of the research. MMR provided an avenue for closed data (quantitative) and open-ended (qualitative) data (Creswell, 2014). The study used quantitative and qualitative research methods sequentially (Venkatesh, Brown & Bala, 2013) and by combining the two methods presents a greater diversity of understandings (Tashakkori & Teddlie, 2008).

5.4.4 PARTICIPANTS

The study includes student participants Years 10–12 from a range of educational Queensland contexts. Specifically, invitations were extended to state and non-state distance education schools and student participants from traditional campus-based state schools across five State School Regions and non-state secondary education contexts.

All students participating in this study were full-time students undertaking a full-time study load or engaged in a combination of subjects such as school-based apprenticeships/traineeships in concert with other school subjects, equivalent to a fulltime study load or approved education activities as specified by the Queensland Curriculum and Assessment Authority (QCAA). Student participants engaged in at least one online course that was either academic, locally known to Queensland schools as OP subjects, non-academic subjects, locally known to Queensland as schools SAS subjects, Vocational Education and Training (VET) courses as a part of a formal VET qualification or a university early entry program.

The invitation to participate was also extended to eligible home-schooling students through the Home Education Association (HEA) as well as the Queensland chapter of Isolated Parents' Association (ICPAS) but unfortunately no home-schooling students accepted the invitation to participate in the study. The researcher is not aware of any barriers that may have limited participation of the home-schooling community, but there were several barriers faced in engaging Queensland secondary students from traditional campus-based contexts and schools of distance education. The following section discusses these barriers and the negative impact these had on student participation rates.

5.4.5 NEGATIVE IMPACT ON STUDENT PARTICIPATION RATE

This study was undertaken during a significant transition period in the senior phase of learning for Queensland schools, with the replacement of the Overall Position (OP) system by the new [to Queensland] Australian Tertiary Admissions Rank (ATAR) (Matters & Masters, 2014). The research was undertaken and concluded prior to the end of the old system and before the full implementation of the new SATE system. Student participants in this study were students of the old OP system (Year 12 students at the time of data collection in 2018) or the new ATAR system (Year 11 students at the time of data collection in 2018). Students studying Year 10 in 2018 were also a part of the new QCE system with invitations to participate in the research extended to Year 10 students.

Unfortunately, while twenty-seven state schools were invited to participate only twelve schools agreed to participate, with only seven of those schools remaining engaged with the researcher and returning the Principal Informed Consent Forms (see Appendix J). The participation rate of state schools was only 15% whereas the non-state sector yielded a 75% participation rate. While there is a huge margin between the two sector outcomes, it is important to put the non-state result into context. While the 75% rate seems strong, it translates to only three out of a total of four non-state schools who agreed to participate. This is a disappointing participation for the total number of schools invited and as discussed in *Chapter 4: Results* has been attributed to the transition year from the old OP system to the new ATAR system.

5.5 DISCUSSION

Chapter 4: Results presented the main findings of the research. Below is a summary of the main findings. Following this summary these findings are further analysed through the lens of the relevant theoretical perspectives in K–12 online learning.

5.5.1 DATA COLLECTION

The anonymous online survey was administered during Term 2 (end of Semester One) of 2018 with opportunity for students to participate over a six-week period.

5.5.1.1 ANONYMOUS SURVEY

The survey was scheduled for this period of time so that sufficient time would be available for data analysis and design of the follow up focus group. The follow up focus group sessions were undertaken at the beginning of Semester Two 2018, prior to the start of Term 4, 2018 where Year 10 students would begin their Year 11 studies.

The anonymous survey was designed with five main sections. The first two sections were designed to understand the student's educational context and identify the type of online course they were engaging in. The next three sections solicited student responses from the three main themes identified from the review of the literature (see Appendix B) and expressed in the conceptual framework (see Appendix A). The

final section of the survey was designed to provide a final opportunity for student voice by asking students to provide any other information about the barriers and enablers they were experiencing in their online course.

5.5.1.2 FOLLOW UP FOCUS GROUP SESSIONS

To further explore student perceptions, the use of purposefully designed questions from the phase one data collection (Creswell, 2014) were used in the follow up focus group sessions. The phase two qualitative data collection tool was designed after analysing the phase one data. The follow-up focus group sessions were scheduled for virtual participation and used a web-based tool that students could access via their school's internet system, or from home. Pertinent insights and quotes were transcribed and used in the data analysis.

5.5.2 DATA ANALYSIS

The original research design was to use descriptive statistics to analyse the phase one data. However, due to the small sample size there was insufficient quantitative data for descriptive statistics to be meaningful.

5.5.2.1 ANONYMOUS SURVEY

Gee's discourse analysis was chosen as it provides the researcher with the opportunity to look for "patterns and links within and across utterances in order to form hypotheses about how meaning is being constructed and organized" (Gee, 2005, p. 118).

5.5.2.2 FOLLOW UP FOCUS GROUP SESSIONS

Following the limited number of students who participated in the online survey, further difficulties in engaging students in the follow up focus groups sessions became apparent. The small participation rate in the focus groups had a negative impact on the findings and was discussed at greater length in *Chapter Four: Results*. After consideration it was identified that discourse analysis would be an appropriate analysis method for the small phase-one data collection.

5.6 K–12 ONLINE LEARNING THEORY

5.6.1 THEORETICAL UNDERPINNING OF K–12 ONLINE LEARNING

When framing research findings, it is important to consider the theoretical perspectives of the literature and identify alignment with the field and as a PhD study demonstrate contribution to the theoretical understanding of the subject (Creswell, 2014). K–12 online learning theory owes its roots to various traditional face to face learning theories such as Vygotsky's social constructivism (Kumi-Yeboah, 2015) which when viewed through a K–12 online learning lens, naturally supports online learning due to the social constructivist experience of online learning (Gulatri, 2008). One helpful way to view the developing landscape of K–12 online learning theory is Lokey-Vega, Jorren-Abellian and Pourreau's cartography (2018), which provides an overview of several significant aspects of the theoretical underpinnings of K–12 online Learning (see *Figure 9*).

To provide a theoretical background for the analysis of this study, the following section discusses two popular theories from a historical perspective. The discussion then shifts to one of the theories where a defence is made for its inclusion where its relevance to the current study is argued. At this point a Student-centred eLearning conceptual lens is presented and discussed. This conceptual lens represents the essential themes derived from this thesis and provides a conceptual lens that answers the research questions and guides the remaining discussion.

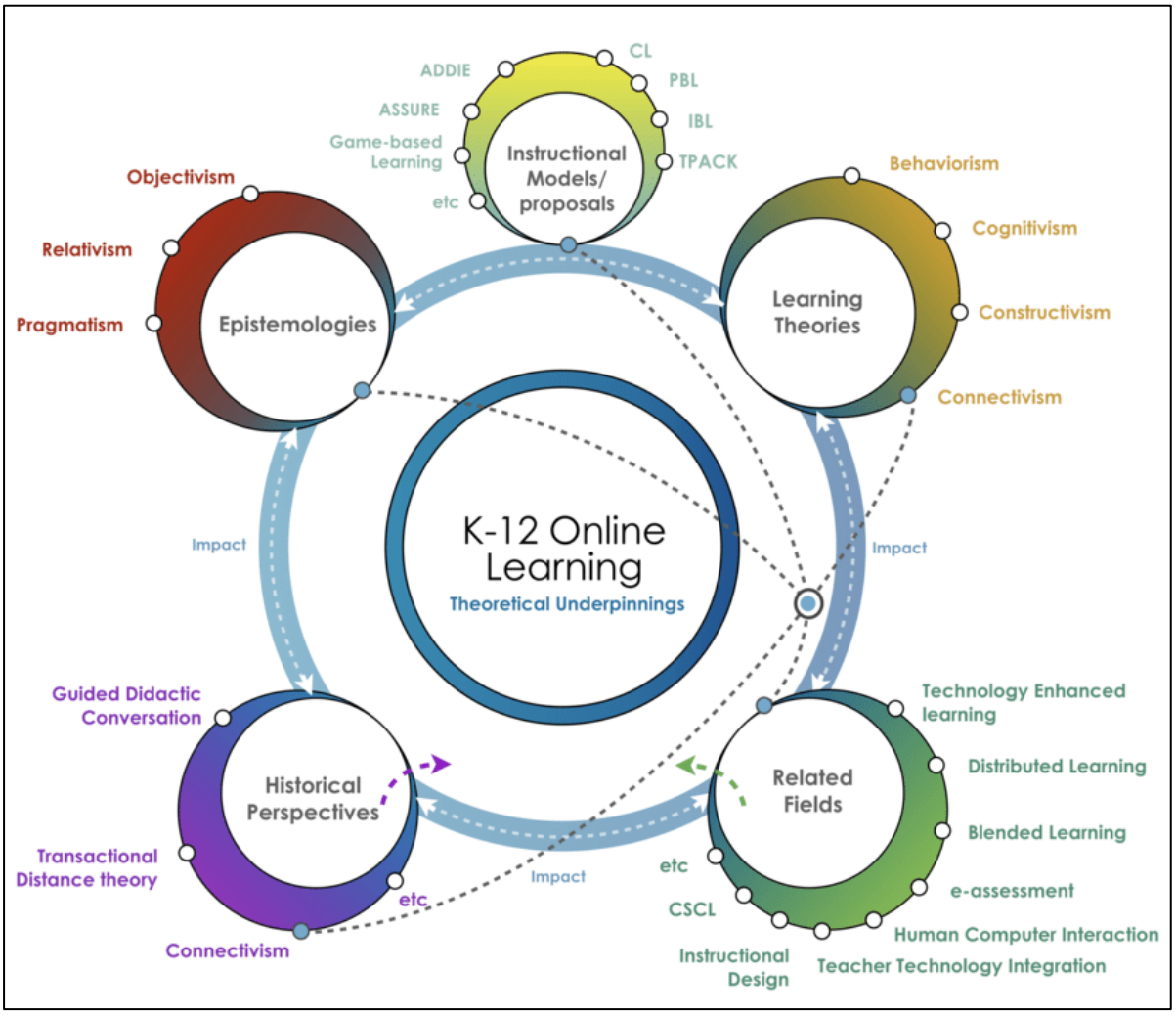


Figure 9 Cartography of the Theoretical underpinnings in K–12 Online learning (Lokey-Vega, Jorrin-Abellan & Pourreau, p. 81, 2018)

5.6.2 TWO THEORIES FROM THE HISTORICAL PERSPECTIVE

K–12 online learning theory is an evolving field the extent of which has been described as "meagre" (Lokey-Vega, Jorrin-Abellan & Pourreau, 2018, p. 65). It has been suggested that the field could benefit from more consistency with regards to the use of terms, particularly phrases such as framework, theory, model and theoretical framework (2018). It has also been suggested that inconsistency of use of language in the field may contribute to researchers' inabilities to build on what is already known (Barbour, 2018). For the purpose of this discussion and in an effort to contribute to building common terminology within K–12 online learning field, the term *theory* has been chosen to discuss the published K–12 online learning theories and the findings of this study. Below is a brief introduction to two important theories.

Two commonly cited theories from an historical perspective for K–12 online learning chosen to frame the discussion are Garrison et al.'s Community of Inquiry framework (Borup et al., 2014, Barbour, 2018; Lokey-Vega, Jorrin-Abellan & Pourreau, 2018) and Moore's Transactional Distance Theory (Borup et al., 2014; Barbour, 2018, Lokey-Vega, Jorrin-Abellan & Pourreau, 2018).

5.6.3 COMMUNITY OF INQUIRY (COI)

Garrison, Anderson and Archer's seminal framework, the Community of Inquiry (CoI) model, was from its inception a way of understanding higher-education online learning (Garrison, Anderson, & Archer, 2000). The CoI model, while initially applied to higher education, has demonstrated itself over time to be a successful model for understanding online learning (Caskurlu, 2018). Barbour encourages K–12 researchers to consider successful models from higher education as K–12 online learning research continues to develop as a discipline in its own right (Barbour, 2018). While the CoI model was published in 2000, it was the subject of a special issue of the *Internet and Higher Education Journal* in 2010, and has been recently applied to studies in higher education (Hilliard & Stewart, 2019), nursing education (Smadi, Parker, Gillham, & Müller, 2019) and K–12 sector (Sanders, 2019) and more importantly re-examined for its construct validity (Dempsey & Jang, 2019).

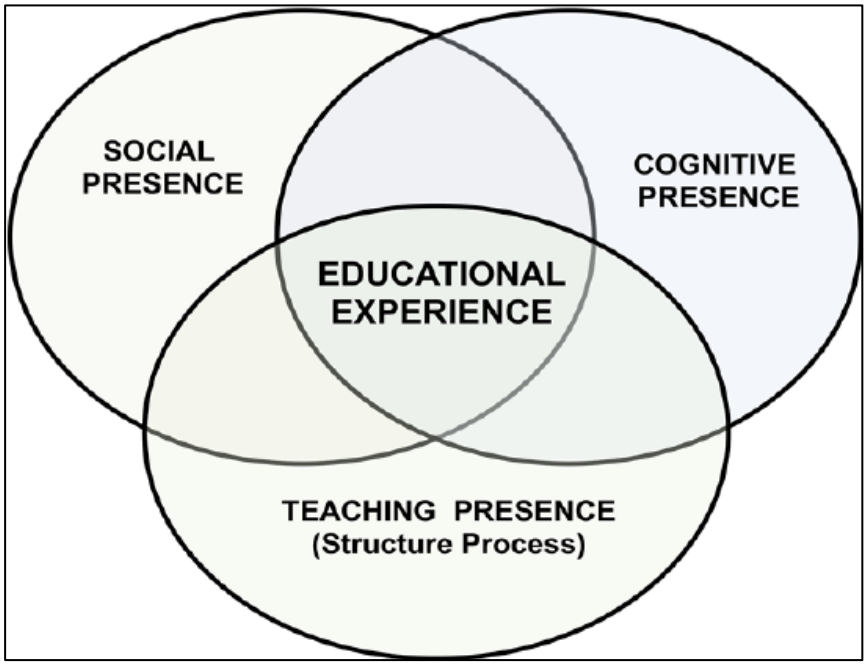


Figure 10 The Community of Inquiry Framework (Garrison, Anderson & Archer, 2000)

The original model as depicted in Figure 10, has been promoted as a model that depicts a worthwhile educational experience (Garrison, Anderson, & Archer, 1999). The framework's foundation is based on John Dewey's 1983 practical enquiry model which is social constructivist in nature (Swan, Garrison, & Richardson, 2009). While the type of students is not explicitly stated in the model, it demonstrates the interactions and relationships between teachers and students. The model comprises of the three constructs of social presence (student's presence), cognitive presence (online learner's communication) and teacher presence (teacher's role) in an online learning environment. These constructs have been identified as critical in the learning process (Garrison, Anderson, & Archer, 1999) and the model assumes the online learning experience occurs at the intersection of these constructs (Swan & Ice, 2010). Each construct is further explained below.

5.6.3.1 TEACHER PRESENCE

Teacher presence relates to "the design, facilitation and direction of cognitive and social processes" (Anderson, Rourke, Garrison, & Archer, 2001, p. 5). This aspect of the CoI theory refers to the design and facilitation of the online teacher (2001). There are two aspects to teacher presence, first the design of the educational experience, which begins with the teacher, and the second, also resting with the teacher, the facilitation of the learning experience (Garrison, Archer, & Anderson, 2000).

5.6.3.2 COGNITIVE PRESENCE

Cognitive presence in the CoI model is the extent to which online learners, through communication within the online course are able to construct meaning (Garrison, Anderson, & Archer, 2001). The construction of meaning is achieved through a community of inquiry which is developed through sustained communication (Garrison, Archer, & Anderson, 2000). The model identifies five phases of negotiation and knowledge co-construction of "sharing/comparing, dissonance, negotiation co-construction, testing and application" (p. 89).

5.6.3.3 SOCIAL PRESENCE

As the name of this aspect of the theory alludes to, social presence refers to the online learner's ability to project their personal characteristics throughout the online learning experience (Rourke, Anderson, Garrison, & Archer, 2001) and is "the ability of participants in the community of Inquiry to project their personal characteristics into the community" (Garrison, Anderson, & Archer, 2000, p. 89). The main objective of this construct is for the online learning participants to present themselves as real people (Annand, 2011). The participant is a direct contributor to the success of the online learning experience.

5.6.4 TRANSACTIONAL DISTANCE THEORY

The second historical theory identified in the literature is Transactional Distance Theory (TDT). Transactional Distance (TD) refers to the separation between the instructor and the student (Murphy & Rodriguez-Manzanares, 2008) and is one way to understand the teaching and learning context in terms of the distance in understanding between the teacher and the student (Giossos, Koutsouba, Lionarakis, & Skavantzos, 2009). TD is the perceived psychological distance separating the teacher and the student, the student and the curriculum, and the student and their fellow students (Weidlich & Bastiaens, 2018). TDT was first introduced in the literature in 1972 by Michael Moore (Moore, 2013) when the first English attempt to define distance education was made (Keegan, 1997) and has been referenced as one of the best ways to understand the dynamics involved with distance education (Krieger, 2017). The construct, transaction was derived from the work of Dewey (Moore, 1993). It is a theory that has been identified as one of the core distance education theories (Giossos, et al., 2009). TDT is an attempt to define distance education by understanding the barriers faced in distance education, specifically understanding if distance education is about a "geographical separation of learners and teachers, or a pedagogical concept?" (Delgaty, 2018, p. 2).

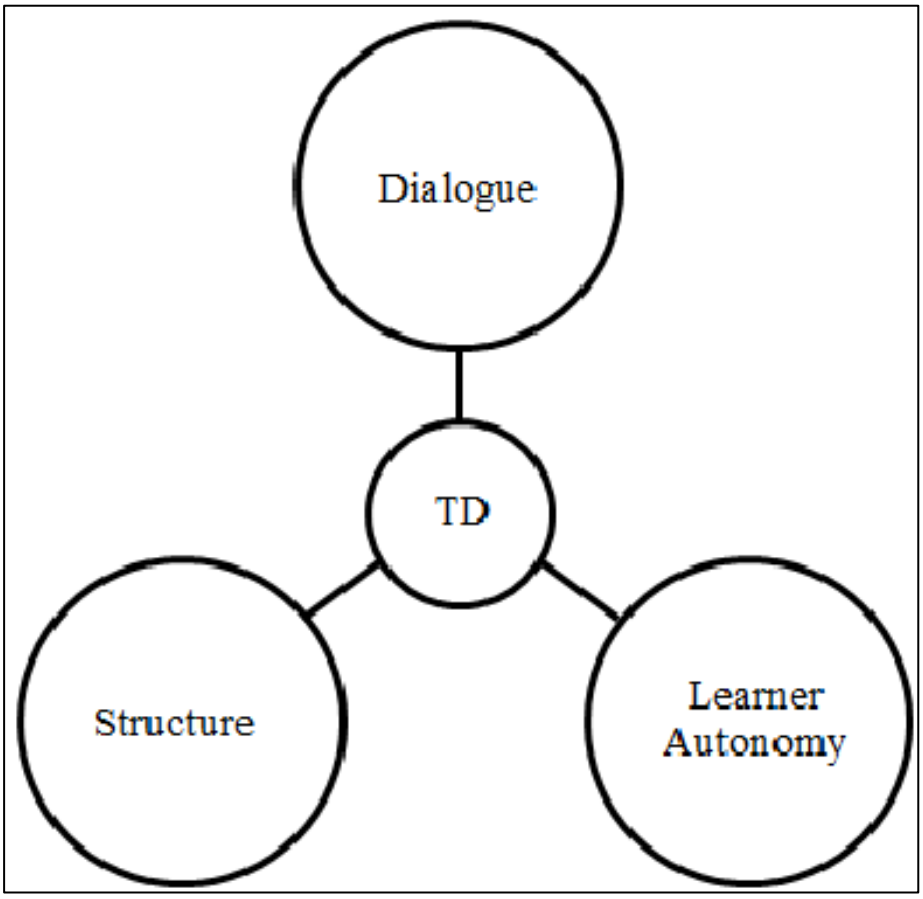


Figure 11 Transactional Distance Theory Constructs (Teall, Wang & Callaghan 2011)

Moore's contribution to understanding distance education as a pedagogical concept included the three key constructs of structure, dialogue and learner autonomy (Moore, 2013) (see Figure 11). The application of these three constructs, structure, learner autonomy and dialogue determine the extent of the transactional distance experienced (Moore, 1993). A large transactional distance will "prohibit students' active engagement with learning in the online course" (Zang 2003 as cited in Weidlich & Bastiaens, 2018). These constructs are discussed below and later are revisited in the context of the results of the present study.

5.6.4.1 STRUCTURE

Structure refers to the nature of the course structure (Falloon, 2011). That is the extent that the education program can accommodate or be responsive to individual student needs (Murphy & Rodriguez-Manzanares, 2008). The structure construct relates to the pedagogical activity of the course and includes aspects such as type of

resources, content and assessment used, the ability of the course to provide a personalised learning experience (Falloon, 2011), in essence the rigidity or the flexibility of the course (Delgaty, 2018).

5.6.4.2 DIALOGUE

The second construct, dialogue, is more than just communication between the teacher and learner (Giossos, Koutsouba, Lionarakis, & Skavantzos, 2009). Dialogue in transactional distance theory refers to all forms of interaction related to the teacher and student in the distance education context (Falloon, 2011) and refers to the positive interactions by each party (Murphy & Rodriguez-Manzanares, 2008). This dialogue is an opportunity for students to share with teachers in the process of the creation of knowledge, and therefore needs to be of sufficient length for this process to be undertaken (Moore, 1997). Traditionally for distance education, this has meant communication between teacher and learner was difficult as it was through print (Moore, 2013). However, with the introduction of synchronous tools such Learning Management Systems (Falloon, 2011) the opportunity for increasing this dialogue will result in less structure and decrease the transactional distance (Delgaty, 2018).

5.6.4.3 LEARNER AUTONOMY

While learner autonomy refers to individual student's ability to plan, find study resources, manage their own time, this construct within transactional distance theory also includes the teacher's role in ascertaining the extent of the learner's autonomy (Keegan, 1997), through the interaction between the learner and the teacher (Moore, 1993). Learner autonomy has also been referred to self-direction such as the student's ability to set their own learning goals and learning experiences and, as this study focuses on adolescents, this facet becomes important as discussed below.

5.6.5 STRUCTURE AND INTERPLAY OF TRANSACTIONAL DISTANCE THEORY

Transactional distance is measured by the extent to which each of the constructs are evident within an educational program (Weidlich & Bastiaens, 2018). Moore, as cited in Keegan (1997, p.7), advocates that these constructs should not be viewed as fixed quantities but rather as variables which are realised through the changing

interplay between dialogue, structure and the autonomy of the students involved from the student's point of view (Weidlich & Bastiaens, 2018).
For example, Moore proposed that as dialogue opportunities within the online course increase, the transactional distance is reduced (Gorsky & Caspi, 2005). Conversely, Moore (2015) also identified that as less dialogue is provided within an online course, more structure is required.

5.6.6 PROPONENTS OF TRANSACTIONAL DISTANCE THEORY

While transactional distance theory has been identified as one of the core distance education theories (Giossos, et al., 2009) there are critics who question the validity of the theory. One issue with the theory is that there is little empirical evidence to test the validity and relationships of the constructs (Delgaty, 2018).

5.6.7 THEORY RE-VISITED

Transactional distance theory has been identified to be important for the collective understanding of distance education and more recent times have seen renewed interest in the theory by a number of researchers (Murphy & Rodriguez-Manzanares, 2008; Giossos, Koutsouba, Lionarakis & Skavantzos, 2009; Benson & Samarawickrema, 2009). This renewed interest in the theory has been attributed to the advancements in technology and its impact on distance education learning (Benson & Samarawickrema, 2018). It has been proposed that the student's ability to successfully navigate educational technology will help or hinder their success in online learning (Weidlich & Bastiaens, 2018).

It has been identified as an analytical framework for understanding distance systems (Murphy & Rodriguez-Manzanares, 2008), general understanding of distance education (Jung, 2001), as a pedagogical concept (Keegan, 1997) and has not only stood the test of time but has also been extended on (Gookool-Ramdoo, 2008) including the theory being revisited to ascertain the construct validity of the framework (Gorsky & Caspi, 2005).

Since Moore's model is a student-centred model, its constructs more accurately align with the conceptual framework of the current research and therefore has been chosen

to provide the theoretical framework for the analysis of the current research as it is closely aligned to the conceptual framework of the study (see Appendix A), which is discussed below.

5.7 THEORETICAL IMPLICATIONS OF THE RESEARCH

The following section discusses the interplay of TDT and the results of the current study. While the CoI model is widely accepted as a valid theoretical perspective for K–12 online learning (Lokey-Vega, Jorrin-Abellan, & Pourreau, 2018) and has recent been revalidated for its relevance (Swan & Ice, 2010), it has not been selected as a framework for the analysis of the current study because the current research focuses on student voice and endeavours to understand the student's perspectives on the enablers and barriers to online learning. However, later in this chapter the author presents the findings of the current study with a conceptual lens that shares aspects of the relationships of the three types of presence in the CoI model. Specifically, Garrison, Anderson, and Archer's (2001) model of social presence can be likened to socialisation and communication, cognitive presence can be likened to resources and content and teacher presence can be likened to teacher-student relationship. This is discussed at length below.

5.7.1 SUITABILITY OF COMMUNITY OF INQUIRY

It could be argued that similar elements of socialisation and communication, resources and content and teacher-student relationship have symmetry to Garrison, Anderson and Archer's CoI (2001). For example, in Garrison, Anderson and Archer's Community of Inquiry (CoI) model, three presences are represented, a social presence, a cognitive presence and a teacher presence. However, one main point of difference is that CoI is a teacher-centred model, where the social presence, teaching presence and cognitive presence are all important aspects from the teacher's point of view as they develop the social construction of the online learning space.

After consideration of the Community of Inquiry model, regardless of the areas of agreement with the current research, Teaching Presence, was identified as being fundamentally different to the third main area under investigation in the present study, Teacher-student relationship.

Teacher presence related to the engagement with the goals and direction, whereas in the current study the investigation of the teacher-student relationship pertains to the engagement of the student with the online teacher. It was at this point that it was identified that Transactional Distance Theory provided a framework through which to understand the findings of the current study.

5.7.2 STUDENT-CENTRED ELEARNING CONCEPTUAL LENS – FIRST DRAFT

The following discussion explores the initial position held by the researcher and the theoretical intersections between the three main research themes, resources and content, socialisation and communication and teacher-student relationship. To frame the findings of the research within the context of K-12 online learning literature, the following model was considered (see Figure 12 below).

This first attempt to articulate the research findings identified three theoretical constructs that intersected with the three main research domains. The first representation of the student-centred model identified the intersection of socialisation and communication with the resources and content. Initially consideration was given to the collaborative learning aspect of social connectivism to understand the intersection of socialisation and communication with the construct of resources and content.

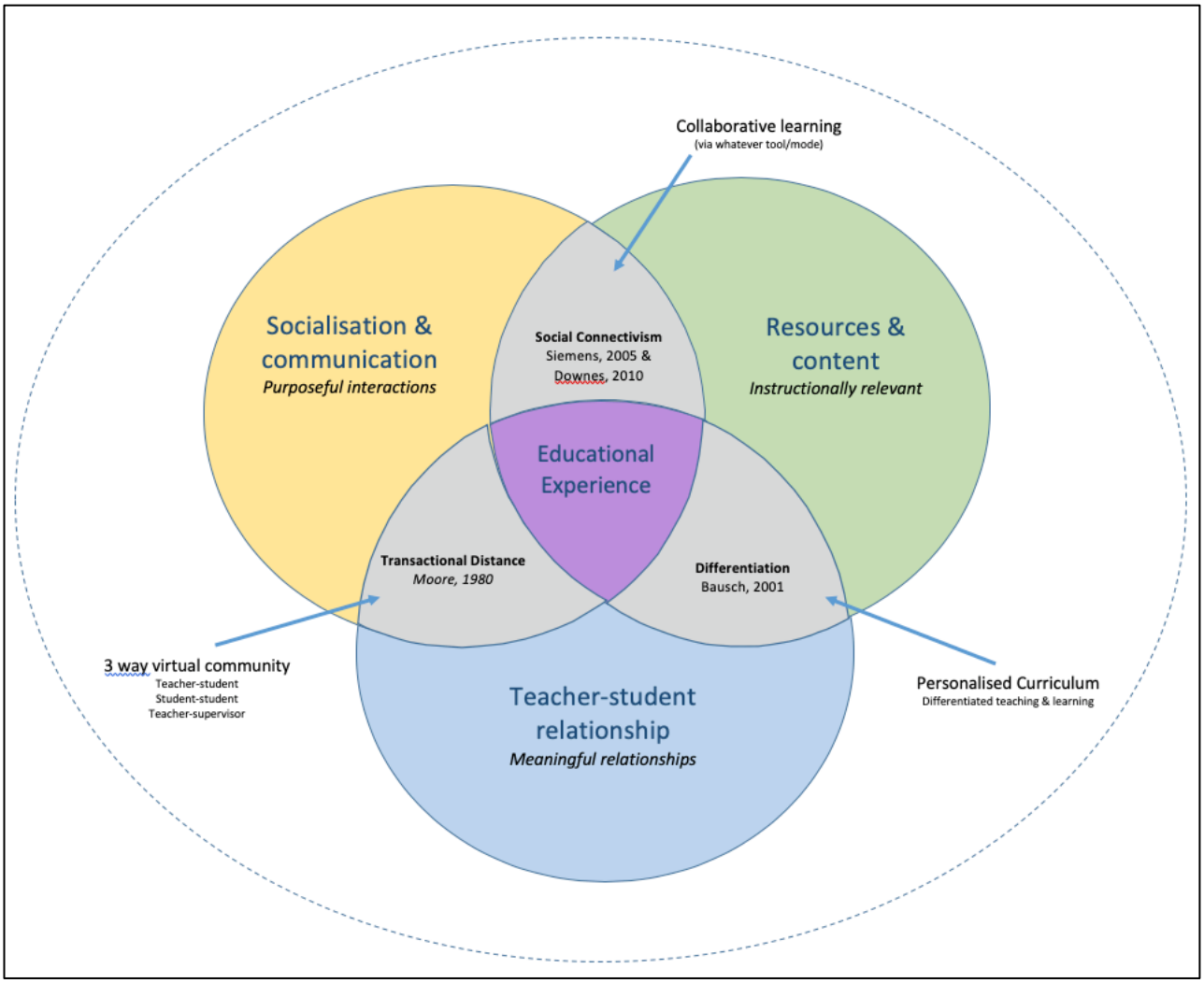


Figure 12 Conceptual lens V1

Similarly, initial consideration was given to the interplay of social learning opportunities such as Vygotsky's theory, where knowledge construction occurs in the interplay of socialisation (Hausfather, 1996). Wong and Baker advocate for an interactive learning environment and argue that interaction is imperative for knowledge acquisition (2009). Dichev, Dicheva, Agre, and Angelova (2013) also advocate for the combination of instructional content that addresses the cognitive and social processes of knowledge construction.

The second intersection was the interplay between the resources and content and the teacher-student relationship. It was initially considered that the interplay between resources and content and the teacher-student relationship could be understood through the lens of differentiation (Bausche, 2001) and that this is the area where,

through a strong teacher-student relationship, the teacher is able to make the necessary curriculum adjustments to the resources and content.

The final intersection initially considered was the intersection between socialisation and communication and the teacher-student relationship. During the initial analysis the students' responses to the socialisation and communication opportunities and the students' responses with regards to the strength or weakness of the teacher-student relationship were best understood through the lens of Moore's Transactional Distance Theory (TDT). TDT makes sense out of the challenges the students faced; in particular TDT explains the significance of distance between the teacher and the student as it applies to the three constructs of dialogue, structure and autonomy (Moore, 2013).

5.7.3 SUITABILITY OF TRANSACTIONAL DISTANCE THEORY

After further investigation of Moore's theory, it was noted that the three research themes of the current study and the three constructs of Transactional Distance Theory share a symmetry (see Table 36).

Table 36
Symmetry of Research Themes and Transactional Distance Theory Constructs

Construct (TDT)	Application	Research Theme
Structure	Structure construct relates to the pedagogical activity of the course and includes aspects such as type of resources, content and assessment used (Falloon, 2011).	Resources & Content
Dialogue	Communication between the teacher and learner (Giossos, Koutsouba, Lionarakis, & Skavantzos, 2009) and refers to all forms of interaction related to the teacher and student (Murphy & Rodriguez-Manzanares, 2008).	Socialisation & Communication
Autonomy	The teacher's role in ascertaining the extent of the learner's autonomy (Keegan, 1997), through the interaction between the learners and the teachers (Moore, 1993).	Teacher-student Relationship

This symmetry is discussed below, with the findings of the current study understood through the conceptual lens. Figure 13 provides a visual representation to this symmetry. The symmetry between the current research main sections and Transactional Distance Theory (see Table 46) demonstrates the agreement between the three main themes of this study and Transactional Distance Theory. This symmetry can also be understood through a visual representation of this interplay (see Figure 13 below).

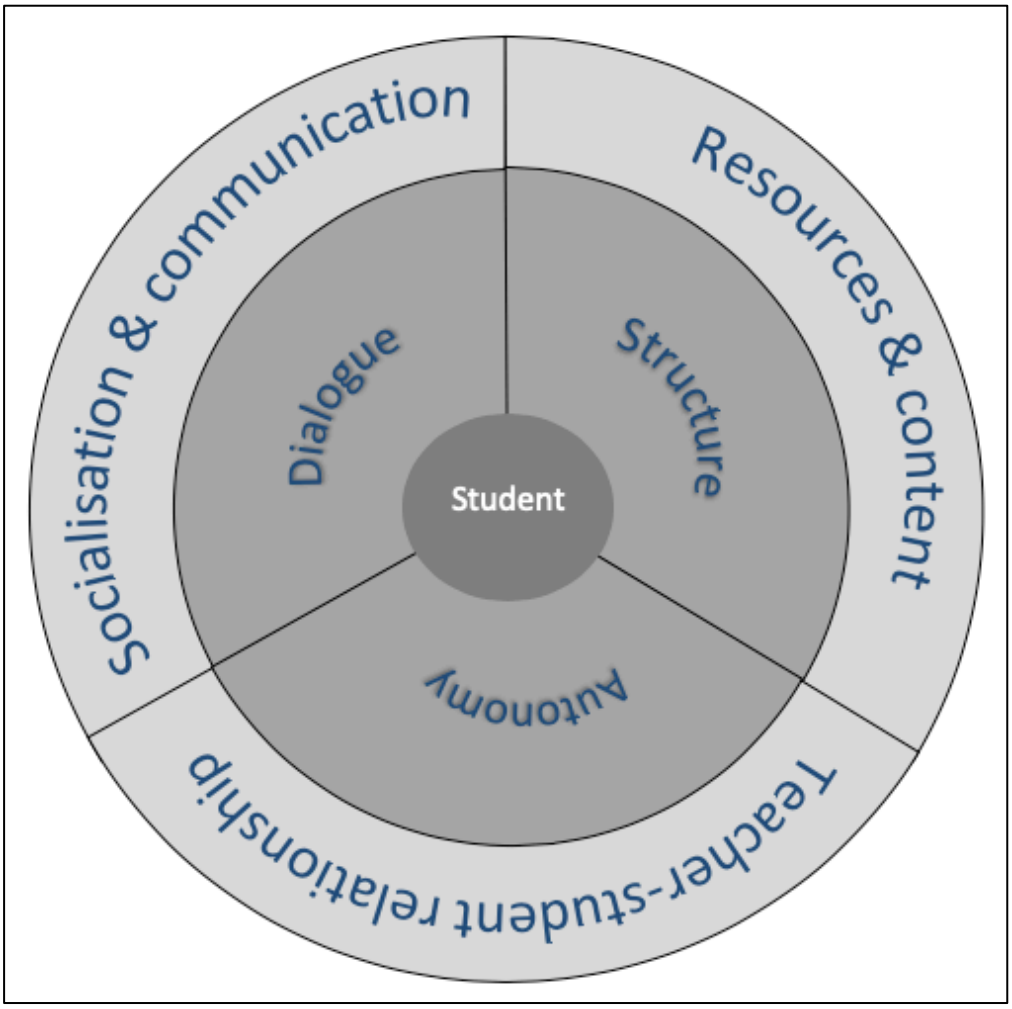


Figure 13 Conceptual Lens with Transactional Distance Theory

5.7.4 K–12 STUDENT-CENTRED ELEARNING CONCEPTUAL LENS

Transactional Distance Theory provides a way for understanding the student responses of the current study and has provided a platform for the development of a K–12 Student-centred eLearning Conceptual Lens. After further analysis of the first version of the K–12 Student-centred eLearning Conceptual Lens and a deeper investigation of Transactional Distance Theory, the K–12 Student-centred eLearning Conceptual Lens is proposed as way of understanding the key findings of online learning from a senior secondary student's point of view (see Figure 14).

Based on the proposal of the Student-centred eLearning Conceptual Lens, the following section defends this proposal and its synergy with TDT in the context of the findings of the current study.

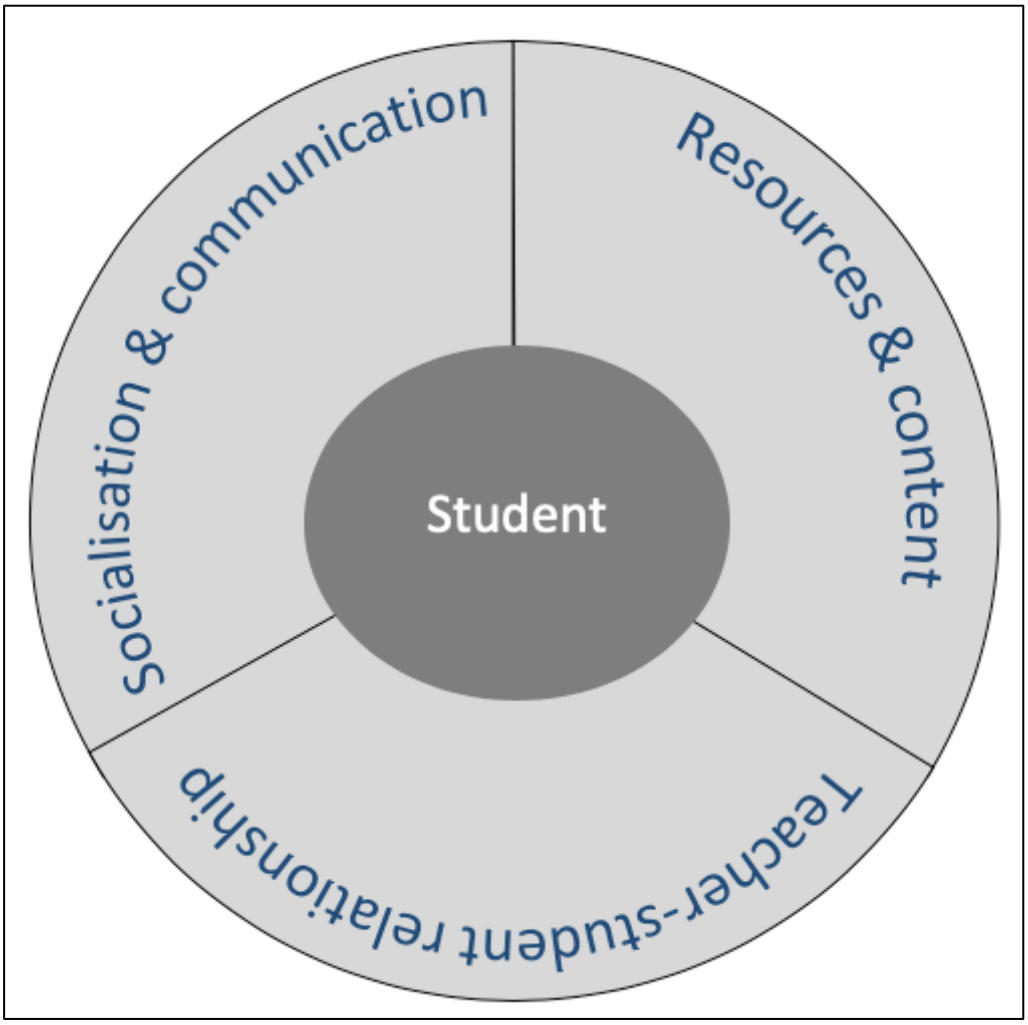


Figure 14 Conceptual Lens v2

5.7.5 MOORE'S AUTONOMY & SOCIALISATION AND COMMUNICATION

Learner autonomy (Moore, 1972) refers to an individual student's ability to plan, find study resources, and manage their own time. Importantly learner autonomy also includes the teacher's role in ascertaining the extent of the learner's autonomy (Keegan, 1997), through the interaction between the learners and the teachers (Moore, 1993). This interaction between the teachers and learners relates to main research area of the present study, socialisation and communication. Socialisation and communication explored the student perceptions of the barriers and enablers related to the teacher-student and student-student interactions. In discussing his construct of learner autonomy, Moore identified the introduction of socialisation and communication through the medium of teleconferencing. Teleconferencing

empowered students to exercise and develop autonomy through presentations and shared activities. At that time, it was a shift in the traditional understanding of distance education theory and has been described as the most important evolution in distance education (Moore, 1993).

The findings below support the relationship between Moore's construct of autonomy and the present study's theme of socialisation and communication. These findings show the impact of the socialisation and communication opportunities on the student's ability to engage with the online course, or as Moore describes, the learner's autonomy.

In relation to the student's ability to manage their learning, students had varying opinions as to the impact that time had on their studies. Twenty-nine percent of students indicated the time delay between asking a question and receiving the reply from the teacher to be a barrier (1.1.2.2 & 4.1.2.1). Students also reported how teacher time was helpful especially with regards to socialisation and communication in their online course (D8). Also related to teacher time, in response to teacher-student relationship, students identified that it was a barrier when the teacher did most of the talking, indicating that the students would like opportunity to contribute.

In the follow up focus group sessions, time delay was further explored to gain a fuller understanding of the students' thoughts on time. When asked about the time delay in communication in the focus groups, student 1, found it not to be an issue. They shared that their teacher would respond quickly to their queries. Another student learnt how to get greater access to their teacher by beginning their assignment work early so they could get access to the teacher before the end of the assignment when the remaining students were trying to get answers as well (Question 2, Student 3).

Another student discussed the challenges they were facing around their ability to plan and organise themselves for online learning and identified poor communication with their online school as a significant barrier for their learning experience. This was highlighted in the focus group sessions where one student found it a barrier that they did not have enough support (Question2, Student 3). This student found it

particularly difficult to get organised and start online learning and felt overwhelmed after their previous face-to-face experience of education. Moving into full-time online learning, they referenced the challenge of having had full-time contact with their previous face-to-face teachers, compared to only various communications through webinars or emails (Question 2, Student 4).

Learner autonomy also includes the teacher's role in ascertaining the extent of the learner's autonomy (Keegan, 1997) which is achieved through the interaction between the learners and the teachers (Moore, 1993). In the phase one data collection, 28% of the students reported teacher time as an enabler and their preferences for socialisation and communication was Skype/video (D4). However, 79% of the students reported that email was the most employed communication method (D4). As teacher time has been identified as being an enabler in online learning, and students prefer Skype/video as their socialisation and communication method, consideration should be given to how online teachers can reduce the high percentage of email communication and take advantage of other technologies such as Skype/Video. This would assist a teacher in assessing the learner's level of autonomy and identify early those students that are struggling with communication, such as student 3, who found initiating communication with the teacher intimidating (Question 4, Student 3).

5.7.6 MOORE'S DIALOGUE & TEACHER-STUDENT RELATIONSHIP

Dialogue refers to all forms of interaction related to the teacher and student in the distance education context (Falloon, 2011). Students identified that face-to-face opportunities (2.1.1.3) and oral communication modes were most helpful dialogue opportunities, and webinars were a helpful avenue for this dialogue (2.1.1.4). During the follow-up focus group sessions students expanded further on the dialogue in their online course with students reporting that when the dialogue was not personalised (2.1.2.1) they found this to be a barrier.

Dialogue also refers to the positive interactions by each party (Murphy & Rodriguez-Manzanares, 2008) and in the current study, 60% of the students reported how these positive interactions were helpful. Students reported that these positive interactions

were good to get to know other students (2.1.1.1) and provided personalised feedback from their teacher (2.1.1.2). In the follow-up focus group sessions students discussed the positive aspect of dialogue with their peers, which was helpful by providing an opportunity for socialisation (2.1.1.6).

According to Moore's theory, dialogue provides an opportunity for students to engage with teachers in the process of the creation of knowledge and there needs to be sufficient opportunity for this process to be successful (Moore, 1997). Students reported how the weekly webinars were helpful in this knowledge acquisition process, by providing an avenue for the students to explore concepts further though the opportunity to ask their teachers questions and to receive feedback on their work (2.1.1.2). During the follow-up focus group sessions students recommended that online students make attending the weekly online sessions a priority (2.2.2.1). One barrier identified during the phase one data collection was teacher reply times. Fifty percent of the students reported that while their teachers reply times were mostly on the same day (E6), 50% of those students reported they were unable to continue study in the subject until they get the assistance from their teacher (E7), which has a negative impact on knowledge acquisition due to the absence of teacher presence.

5.7.7 MOORE'S STRUCTURE & RESOURCES AND CONTENT

As discussed earlier in Moore's theory of Transactional Distance, structure refers to the nature of the course structure (Falloon, 2011). The structure construct relates to the pedagogical activity of the course and the rigidity or the flexibility of the course (Delgaty, 2018). There were several pedagogical issues that arose during the research.

The pedagogical issues students found as barriers to online learning included technology problems with recorded information (3.1.2.4), students' perceptions that they could not interrupt the teacher in live sessions (3.2.2.1), and when students were able to use the only chat function during online sessions (3.1.1.1).

While there were a few barriers, most of the student perceptions of the pedagogical decisions teachers were making were things that the students found as enablers. One

of the aspects of structure in Transactional Distance Theory is the rigidity, or flexibility, of the course structure. Students in the current research suggested that online teachers could provide more flexibility by making the course more interactive (4.1) and more enjoyable (4.2). Students also reported that the course structure was of a high quality (SQ003) and the most helpful resources and context were live webinars (C7). Students had different opinions regarding the rigidity and flexibility of the webinars with one student finding the webinar an opportunity to get feedback and have more detail on a subject provided (3.1.1.1). However, in response to the same question during the follow-up focus groups another student reported the webinars to be rigid and they felt they could not interrupt the teacher (3.2.2.1) and that their online teacher disregarded the questions being asked and just kept presenting the content of the lesson (3.1.2.3).

5.8 CONTRIBUTION OF THE RESEARCH

This study has provided useful evidence on senior secondary student perceptions of barriers and enablers in online learning and has the potential to make contributions to K–12 online learning theory, educational policy and to senior secondary online learning practitioners. Each of these potential areas of contributions is discussed below.

5.8.1 METHODOLOGICAL CONTRIBUTION

As identified in *Chapter 2: Literature Review* a number of authors have identified that K–12 online learning and P–12 online learning are open research fields which will benefit from this research. While research on student perceptions of blended and online learning is in its relative infancy stage (Siko, 2014) with limited published research (Barbour, 2012), this study contributes to the growing body of literature on student perceptions of barriers and enablers in online learning as they apply to resources and content, socialisation and communication and finally teacher-student relationship. This study also contributes to the theoretical understandings of K–12 online learning, particularly the Student-centred eLearning Conceptual Lens to Lokey-Vega, Jorrin-Abellan & Pourreau's K-12 Online Learning Theoretical

Underpinnings by contributing to the Instructional Modes/proposals presented in Figure 9.

The results of this research can be used to help in the developing theory of online learning. Through interaction with historical theoretical perspectives of K–12 online learning theory, this study has contributed to the theoretical realm with the Student-centred eLearning Conceptual Lens. The conceptual lens has been informed by a review of K–12 literature, shaped by transactional distance theory, differentiation and social connectivism learning theories to frame the student voice. Specifically, this research contributes to theory by providing an avenue of student voice about the barriers and enablers of resources and content, socialisation and communication and teacher-student relationship of Queensland state and non-state senior secondary online learners.

5.8.2 CONTRIBUTION TO POLICY

This research has the capacity to contribute to Queensland school policy specifically with consideration to the Gonski funding model and its application to non-state schools of distance education. As a needs-based model this research has demonstrated that students need high levels of support in the delivery of online curriculum. Non-state schools of distance education receive significantly lower funding per student than campus-based students (Harding, 2014) (see Figure 15).

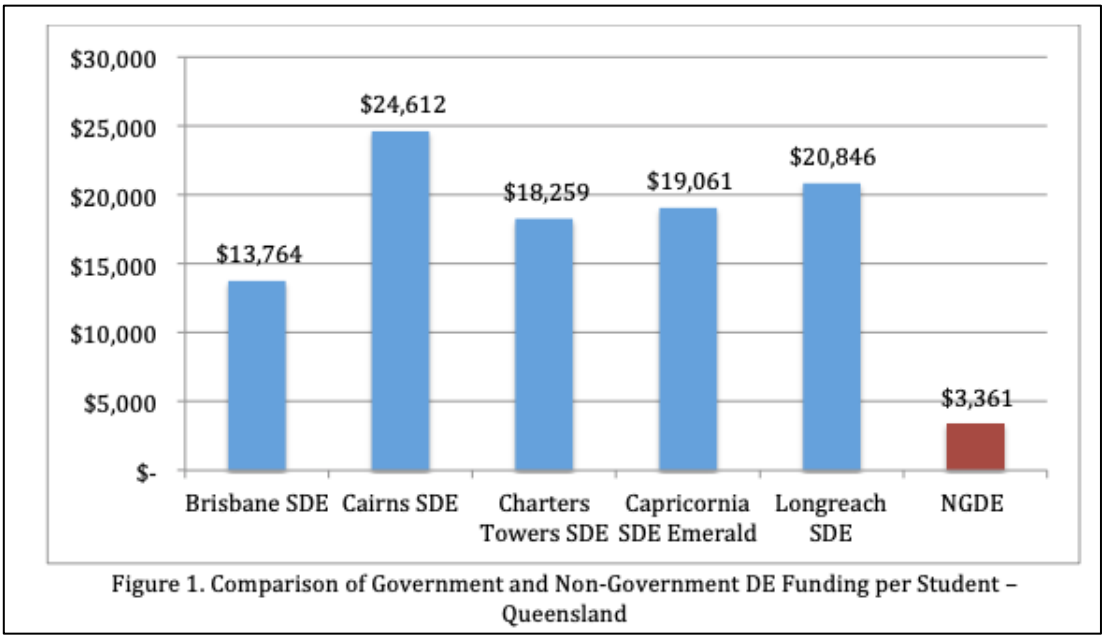


Figure 15 Comparison of Government and Non-Government DE Funding per Student – Queensland (Harding, 2014)

Figure 15 demonstrates that non-state schools of distance education are disadvantaged financially, which has a direct bearing on the amount of support a Queensland secondary online teacher can give. This research highlights the barriers that students face, particularly with regards to more teacher support, when undertaking an online course. Harding (2014) has expressed his concern to the Senate Select Committee on School Funding over the funding inequity, labelling it a social injustice. It is a concern that there is a gross disparity in funding between state and non-state schools of distance education.

This research can also contribute to State policy governing bodies such as the Queensland Curriculum and Assessment Authority (QCAA), Department of Education and Training (DET) and Education Queensland (EQ) as it provides detailed information about Queensland senior secondary students' perceptions of the barriers and enablers when undertaking an online course. As identified in *Chapter 2: Literature Review*, there is very little published research into online learning, and no specific Queensland online learning publication from any education regulatory or curriculum authority. In a recent publication from the QCAA, the discussion of online learning, while only four paragraphs long, is a step in the right direction to advancing online learning for Queensland secondary students (Queensland Curriculum Assessment Authority, 2015a). The current research lessens this void, and has potential to help regulatory bodies, such as the Queensland Curriculum and Assessment Authority, to better understand the current educational opportunities online learning is providing for Queensland senior secondary students, as well as the need for further investigation into student centred online pedagogical frameworks.

5.8.3 CONTRIBUTION TO PRACTICE

Potentially, one of the largest beneficiaries of this research is senior secondary online teachers, state, non-state and internationally. The research identifies barriers and what enablers secondary students are experiencing with regards to resources and content, socialisation and communication and the teacher-student relationship. The findings of this study have the potential to help online teachers to understand the student's experience and provides an opportunity for online teachers to learn about what is working, and what is not working, for their students. This research can also help online teachers understand the significance of Transactional Distance Theory as

it relates to the resources and content they use in their online courses, the socialisation and communication opportunities in their delivery, and their teacher-student relationship in the online realm.

Other potential beneficiaries include local schools and state schools of distance education, online teachers, Heads of Department, Deputy Principals, Principals of online schools and home-school supervisors would benefit from a deeper understanding of the student's experience of online learning. The research also has the capacity to contribute to VET providers who might benefit from improving their understanding of senior secondary students' learning needs as they undertake VET courses during Years 10–12.

5.9 LIMITATIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

Through the course of this study the researcher has identified limitations to the study. These are discussed below with the following section providing recommendations for further research.

5.9.1 LIMITATIONS

This study was hampered by the low participation rate identified in this chapter and *Chapter 4: Results*. One of the challenges to the research was the inconsistent promotion of the research opportunity within schools. Varying levels of advocacy for the research limited the student participation rate and is one of the reasons for such a low state school participation rate (4%). It is therefore recommended that research be undertaken within individual regions, where the support of the Regional Director could be solicited, and a central dissemination of the research material provided. Alternatively, research could be conducted at a State level, through the Department of Education. Another limitation of the current study is that only three student voice themes were investigated.

5.9.2 FUTURE RESEARCH

Future research into socialisation and communication would allow for a broader representation of secondary students' perceptions of online learning. Along this line

of research, a study into onboarding first time online learners and the support new online learners require in socialising and communicating in an online realm would be potentially valuable.

Another study might be conducted on resources and content. A limitation of this study was that questions about the resources and content were limited to only eight questions in the phase one data collection and two in the follow-up focus group session. Further research into the types of learning resources, such as text, audio, video, interactive learning objects and virtual reality and augmentation, would provide a broader understanding of the resources and content that senior secondary students studying online find helpful.

Similarly, a study into teacher-student relationships could help facilitate more information on how online teachers can strengthen the teacher-student relationship in the online realm. An investigation of this nature would lead to further understandings of engagement of senior secondary students.

Further research could be conducted into attrition rates for Queensland online students. Post-compulsory education experiences high attrition rates resulting in students failing to complete online courses (Drysdale, 2013), and research into a group of Queensland senior secondary student attrition rates, and the factors that contribute to a student's inability to complete an online course would be beneficial.

While not directly related to the current study, underlying a school's ability to deliver education is the economic model supporting its endeavours. As identified earlier in this chapter, funding for Queensland non-government schools of distance education is lower than that of non-government schools of distance education by 58% funding provided for a full-time day school student. As both government and non-government schools of distance education are legislated to deliver a national curriculum, there appears to be inequity in the funding model to government and non-government schools of distance education. Further research is needed to support policies that ensure that Queensland regional, rural and remote students have the same resourcing and support as students who attend campus-based schools or government schools of distance education.

5.9.3 POLICY RECOMMENDATIONS

In addition to the recommendations for further research state, territory and federal governments should review the needs-based funding model to include increased funding for the highly complex and difficult task of designing and delivering online courses that support non-state regional, rural and remote senior secondary students. An accurate interpretation of needs-based funding would see increased funding and potentially funding parity for students accessing their formal secondary education via state or non-state schools of distance education.

In the report proposing the latest education reform for Queensland an important point was made regarding the significant impact technology is having on Queensland education:

> Increased technology in everyday life has already influenced education. It is widely believed that the increasing availability of powerful and transformative interactive digital technologies will redefine how learning takes place in schools in the near future. (Matters & Masters, 2014, p. 3).

Designing and delivering online courses is time consuming and a difficult task (Dubuclet, Lou, & MacGregor, 2015) and this research has demonstrated that students require more support from their online teachers. This is a critical need for online students and it has been identified in the Gonski review that:

> Frequent and real-time student feedback can help teachers to assess the impact of their teaching practices on each student and modify approaches to better suit different student learning needs (Australian Government Department of Education and Training, 2018, p. 26).

The student perceptions of the barriers and enablers for senior secondary students highlight the importance for Queensland teachers, educational leaders and policy makers to ensure that distance education schools, both state and non-state receive adequate funding to support the increasing number of students studying online. Reduced funding per student for distance education schools is incongruent with the evidence presented in this paper to support Queensland senior secondary students engaged in online courses and places regional, rural and remote students in the position of further disadvantage compared to their coastal and city counterparts.

Regional, rural and remote students, once again, are at risk of disengagement from formal secondary education and from the opportunity to prepare for a lifelong contribution to society.

Considering the international upward trend in K–12 online learning, and other significant international developments such as the establishment K–12 online learning education advocacy groups such as the Online Learning Consortium (OLC) and Digital Learning Collaborative (DLC, highlights the limitations in Australia K–12 online learning. The lack of Australian educational literature about online course standards, online teacher registration or mandatory participation in online learning during the senior phase of learning, is surprising. Especially when considering the Queensland Curriculum Assessment Authorities advocacy of 21st Century skills (QCAA, 2015), and the recognition by some of the nation's most prolific educational researchers, such as Geoff Masters, it seems remiss that online learning has not found its voice in educational reform as a priority or in policy development such as parity of funding for Distance Education Schools that deliver curriculum online learning.

5.10 SUMMARY OF THE STUDY

This study examined senior secondary student perceptions of the barriers and enablers in online learning.

5.10.1 RESEARCH QUESTION

After an extensive review of the literature it was identified that the issue of student voice needed more attention. This research addresses that gap in the literature by answering the research question:

> *What are regional, rural and remote Queensland senior secondary student perceptions of enablers and barriers when undertaking an online course?*

The literature review identified the themes of socialisation and communication, resources and content and teacher-student relationship which were chosen to frame the investigation.

5.10.2 LITERATURE REVIEW

Three main themes related to student voice were identified in the literature. The most frequent themes related to student voice were: communication and socialisation; resources and content; teacher-student relationship; student aptitude/skill and student engagement. The review was organised as follows:

1. The Australian Education Landscape
2. Queensland Context
3. Blended Learning and Online Learning
4. Student Voice
    a. Resources and Content
    b. Socialisation and Communication
    c. Teacher-student Relationship

Much of the current understanding of online learning theory has come from the higher education sector (Louwrens & Hartnett, 2015) and more research from the student's perspective is required (Barbour & Zhang, 2012).

5.10.2.1 GAP IN THE LITERATURE

Schultz (2011) identified that Australian research is weak, with very little published work or recent publications. We need to know what is working and what is not (Pratt, 2018; Choon-Lang, 2010). This research addressed the gap in the literature on Queensland senior secondary students' perceptions of enablers and barriers in online learning in the themes of resources and content, socialisation and communication, and teacher-student relationship.

5.10.3 PARTICIPANTS

While 26 state schools were invited to participate in the research, only 7 agreed to participate initially and just one of the invited schools ultimately participated. A higher participation rate was achieved from the independent sector at 3 out of 4 schools invited. A barrier to engagement for schools was that the data collection occurred during the final years of the old OP system, when Queensland secondary schools were under pressure both to deliver the old OP scores and also engage with

the new Senior Syllabus, and the introduction of the ATAR external assessment system. A full discussion of these challenges is offered in Chapter Four.

In response to the low participation rate, the analysis methodology for the phase one quantitative data was adjusted from descriptive statistics to discourse analysis. Two constructs were explored within the key themes, barriers to online learning and enablers to online learning.
These findings were framed using a Theme Development and Coding Method and were organised under the headings of teacher actions/decisions and student actions/decisions, which were further delineated by the headings, enablers and barriers.

5.10.4 DATA COLLECTION

The research methodology employed was a Mixed Methods Explanatory Sequential approach (Appendix D). Mixed Methods provides an avenue to combine quantitative and qualitative data collection techniques (Creswell, 2014) and gives equal priority to both data sets through a two-phase data collection process (Terrell, 2012). Mixing the data provided a stronger understanding of the subject that either methodology by itself could not achieve (Creswell, 2014). The phase one anonymous online survey was divided into six sections. The data from phase one informed the design of the phase two focus group questions (see Appendix G). The follow-up focus Data Analysis

The original research design was to use descriptive statistics to analyse the phase one data. However due to the small sample size, there is not enough quantitative data for such analysis. Gee's discourse analysis was chosen as a more appropriate analysis method (Gee, 2005). Phase-two data analysis employed a Thematic Analysis (TA) method through the use of text coding and theme development (Creswell, Plano Clark, & Garrett, 2008).

Results were organised through the creation of a Theme Development and Coding method (see Figure 16). Results were categorised as either enablers or barriers, with the data related to either a teacher action/decision or a student action/decision arranged accordingly.

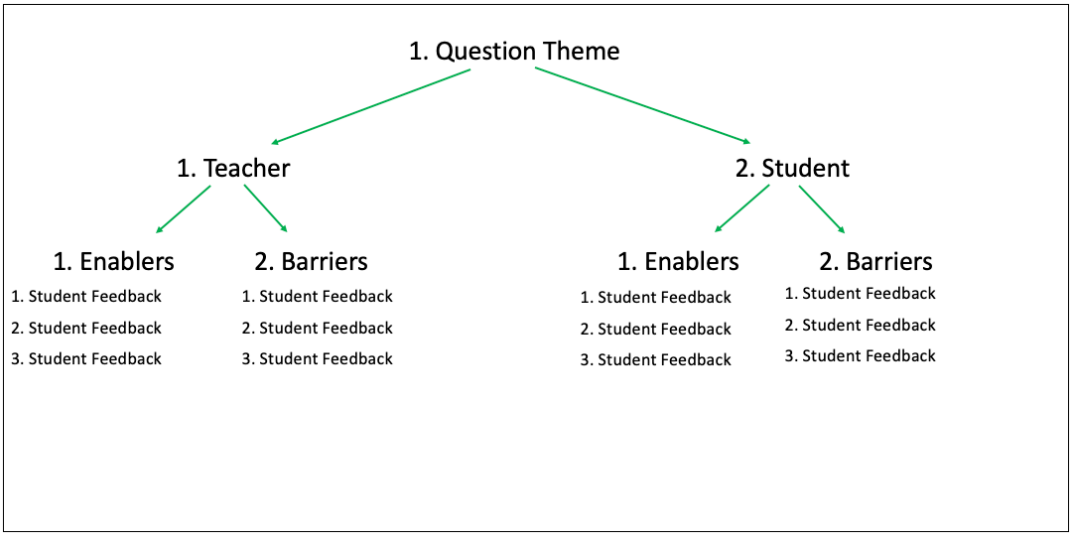


Figure 16. Theme Development and Coding Method

5.10.4.1 RESOURCES AND CONTENT

Student responses to the online resources category were nearly equally split between teacher decision/actions (52%) and student decision/actions (48%). Two sub-themes were identified from the responses: 80% of the responses related to pedagogical decisions teachers were making, and the remainder related to technology. The technology responses were evenly split between enablers and barriers.

5.10.4.2 SOCIALISATION AND COMMUNICATION

The student responses to socialisation and communication were mostly related to things that students found helpful, while 43% of the responses related to things that the students found to be barriers to online learning. Fifty-seven percent of the response's related to actions/decisions that teachers make. Three sub-themes were identified with the majority of the responses related to the sub-theme relationships.

5.10.4.3 TEACHER-STUDENT RELATIONSHIP

The majority of the responses to the questions related to the teacher-student relationship were teacher actions/decisions, with only 28% of the response's related to actions/decisions students make. Things that students found helpful in developing the teacher-student relationship represented 68% of the responses, and 32% identified as barriers to the teacher-student relationship. Two sub-themes presented,

personalisation (45%) and initiative (55%) with the majority of the responses related to the sub-theme of initiative. The majority of these answers were things that students found helpful in developing the online teacher-student relationship.

5.10.5 SYMMETRY WITH TRANSACTIONAL DISTANCE THEORY

In revisiting the literature in an attempt to frame the findings of the study a model was develop a model. While constructing the model, after further investigation of Moore's theory, it was noted that the three research themes and the three constructs of Transactional Distance Theory shared a symmetry. The model was modified and re-designed to communicate the symmetry between Transactional Distance theory and the research findings. The model and how this research contribute to the literature is discussed below and concludes this study.

5.10.6 CONTRIBUTION TO LITERATURE

A Student-centred eLearning Conceptual Lens was devised from the results. In the first version of the conceptual lens, three theoretical constructs were identified at the relevant intersections of the three main research dominos (see Figure 17). After further investigation of Moore's Transactional Distance Theory, the Student-centred eLearning Conceptual Lens was redesigned and is positioned to better articulate the relationship of the findings of the study. Transactional Distance Theory provided a more reliable lens to understand the student responses, in particular understanding distance between the teacher and the student with regards to resources and content, socialisation and communication and the teacher-student relationship.

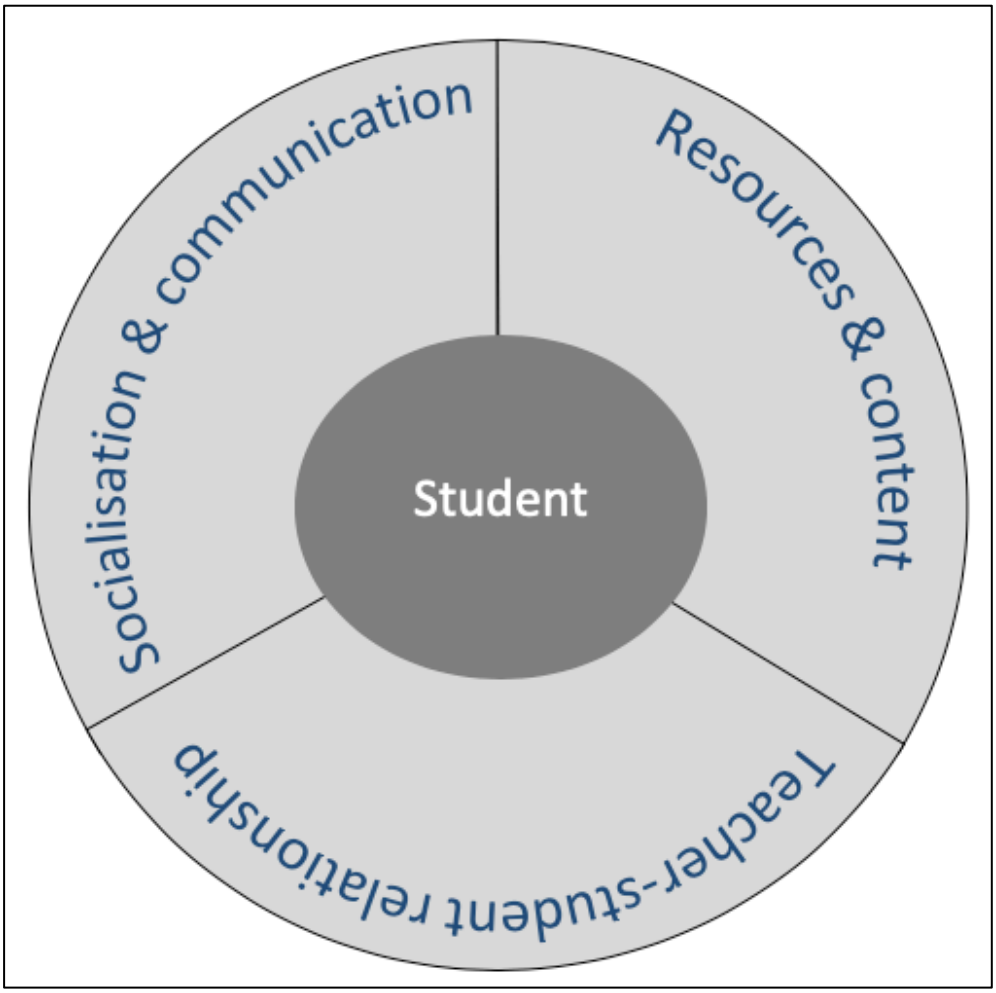


Figure 17 Conceptual Lens

5.10.7 RECOMMENDATIONS

The study concluded with an outline of its contribution of this field of study and recommendations for further study. This study contributes to the growing body of literature on student voice, particularly, student perceptions of barriers and enablers in online learning as they apply to resources and content, socialisation and communication and finally teacher-student relationship. It also helps to inform policy, specifically with regards to the Gonski funding model and its application to non-state schools of distance education, by demonstrating the need for more support for online teachers. The study also contributes to practice in that senior secondary online teachers can benefit from understanding student voice, and the barriers and enablers identified by students engaging in online learning.

Finally, recommendations for further research were made. It was suggested that repeating the same study after the new senior syllabus and external assessment

system are well embedded into Queensland secondary schools might provide more extensive data. In addition, a state-sponsored study from the Department of Education, into all state schools of distance education would provide a large data set for thorough analysis. It is also suggested that a study into the attrition rate of secondary students who undertake online learning would provide more understanding of the impact of the barriers students face and identify strategies to mitigate them.

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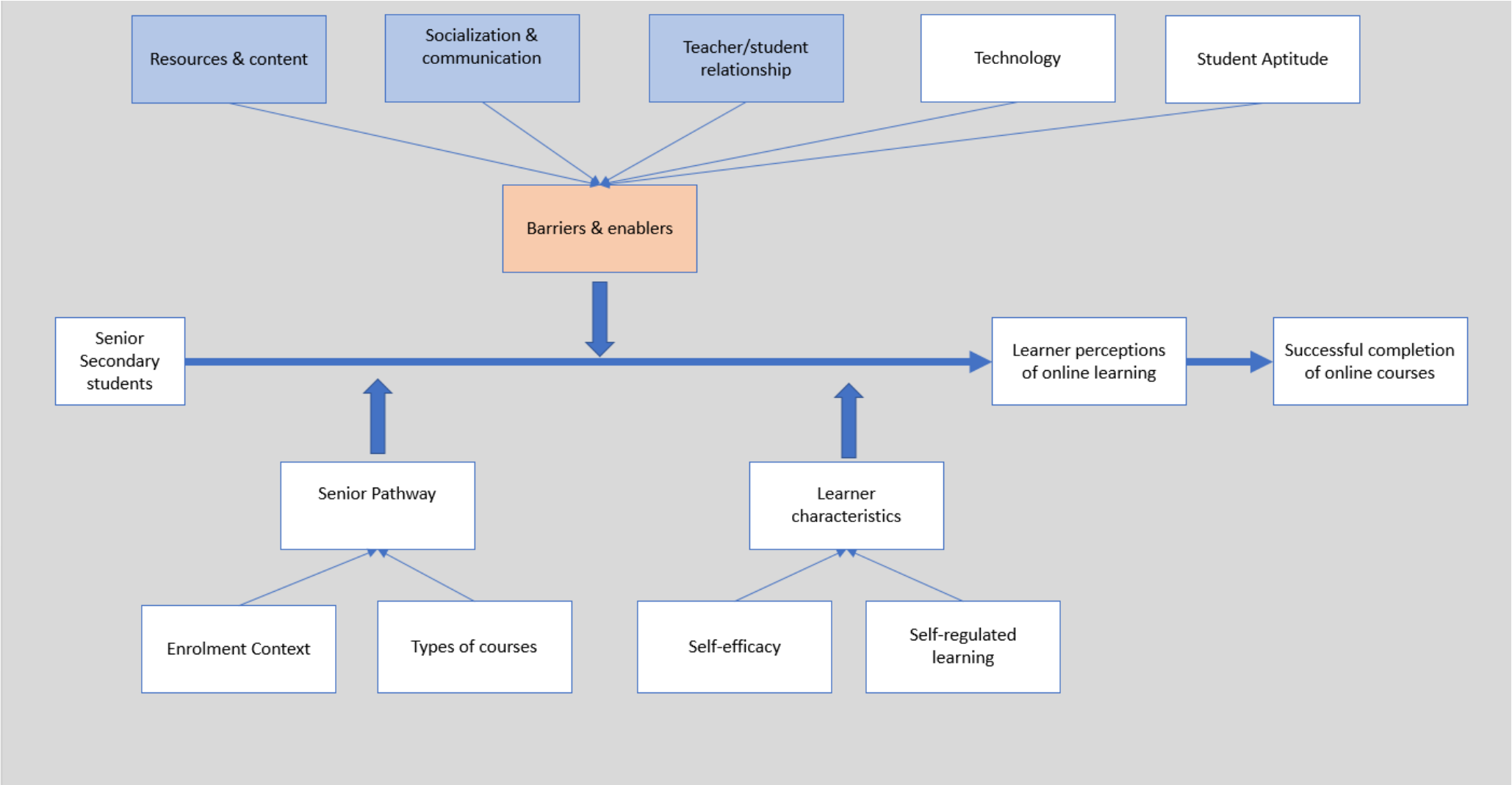
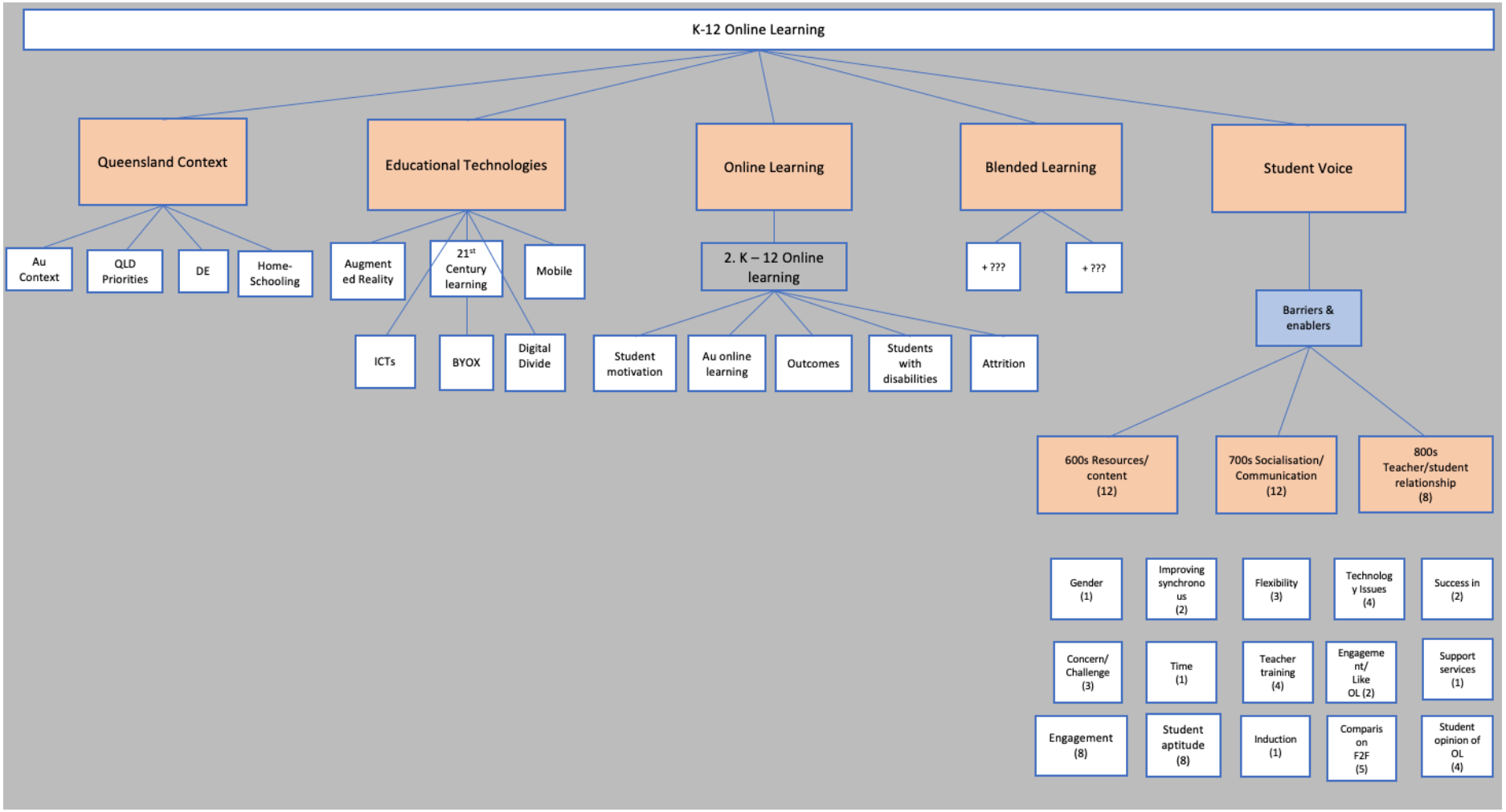
APPENDICES

APPENDICIES

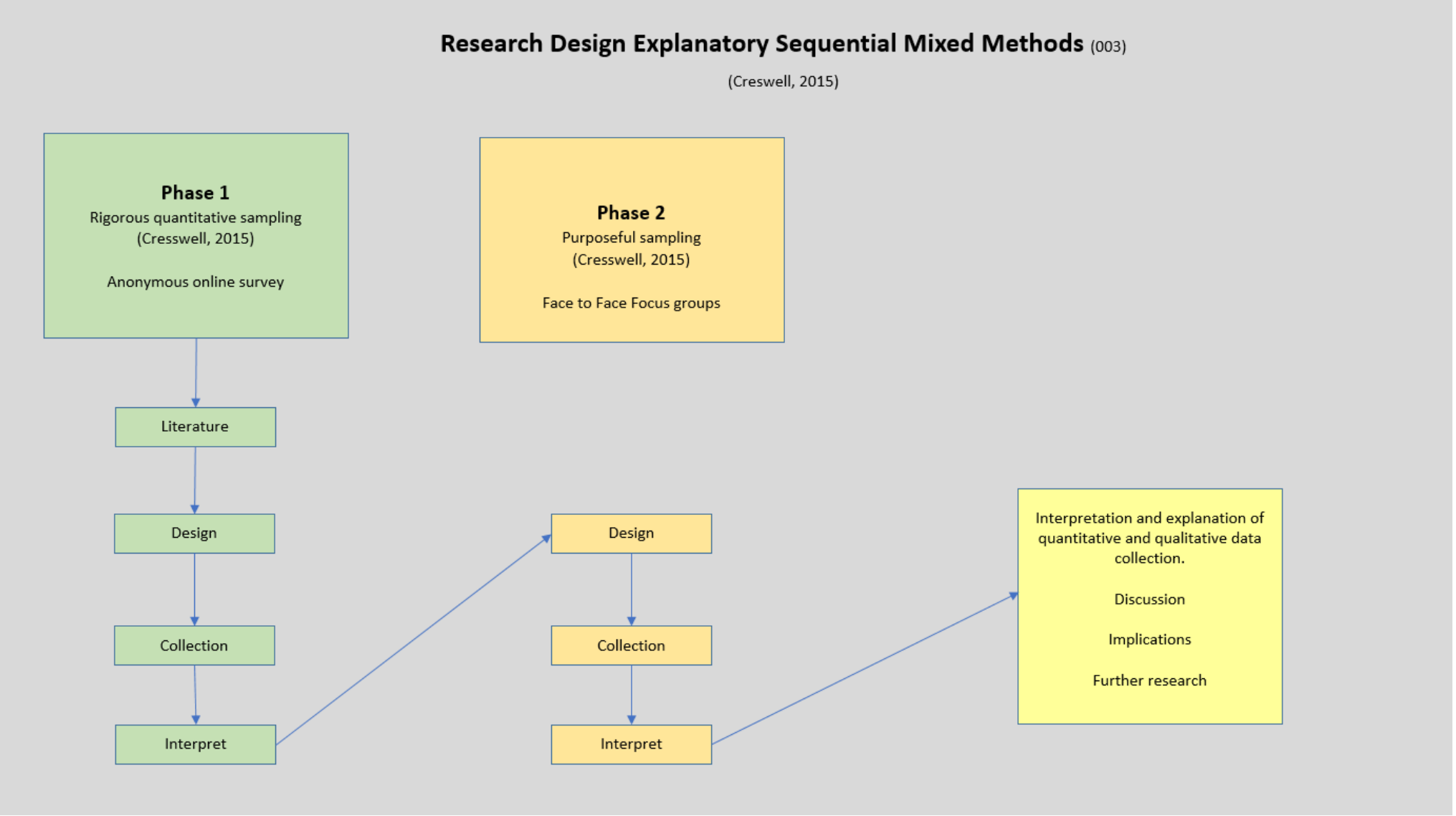
APPENDIX A. CONCEPTUAL FRAMEWORK



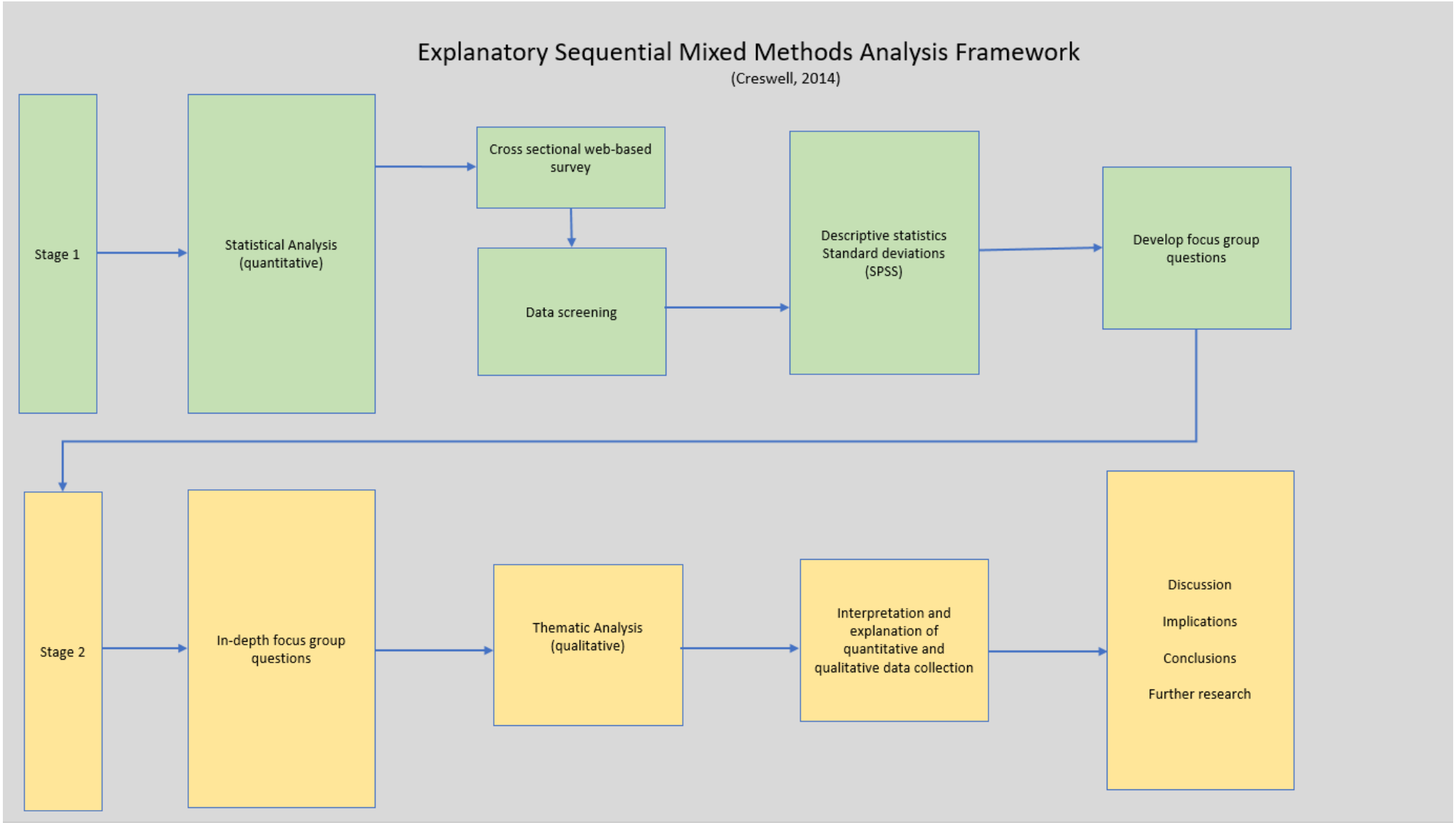
APPENDIX B. LITERATURE MAP



APPENDIX C. RESEARCH METHODOLOGY



APPENDIX D. ANALYSIS FRAMEWORK



APPENDIX E. PHASE 1 ONLINE QUESTIONNAIRE

Secondary students talk about online learning

This survey is designed for Queensland secondary students undertaking online learning to get some feedback about their online learning experience.

You have received this link as you have given consent to participate in this survey. It should only take about 30 minutes to complete and we really appreciate you taking the time to answer these questions.

If you have not given permission to participate in this survey please close this web page.

If you have any queries, please email the researcher Mr Jeffs at w0068202@usq.edu.au

There are 53 questions in this survey.

What year are you in? *

ⓘ Choose one of the following answers
Please choose **only one** of the following:

- ◯ Year 10
- ◯ Year 11
- ◯ Year 12

What is your gender? *

Please choose **only one** of the following:

- ◯ Female
- ◯ Male

Are you Torres Strait Islander or Aboriginal? *

ⓘ Choose one of the following answers
Please choose **only one** of the following:

- ◯ Aboriginal
- ◯ Torres Strait Islander (TSI)
- ◯ Both TSI and Aboriginal
- ◯ Neither Aboriginal or TSI
- ◯ Prefer not to state

What best describes your enrolment situation. *

ⓘ Choose one of the following answers
Please choose **only one** of the following:

- ◯ I am enrolled as a campus based student and attend a state school campus
- ◯ I am enrolled as a campus based student and attend a private school campus
- ◯ I am enrolled as a distance education student through a State School of distance education
- ◯ I am enrolled as a distance education student through private school of distance education
- ◯ I am enrolled with the government as a home-schooling student

What school are you enrolled in? *

ⓘ Choose one of the following answers
Please choose **only one** of the following:

- ◯ Australian Christian Home-schooling
- ◯ Biggenden State School
- ◯ Brisbane School of Distance Education
- ◯ Charleville School of Distance Education
- ◯ Charters Towers State High School
- ◯ Clermont State High School
- ◯ Collinsville State High School
- ◯ Emerald State High School
- ◯ Home Education Association QLD
- ◯ Home Hill State High School
- ◯ Home-schooled (through no school)
- ◯ Jubilee Christian College
- ◯ Longreach School of Distance Education
- ◯ Longreach State High School
- ◯ Moranbah State High School
- ◯ Morton Christian College
- ◯ Mount Isa School of the Air
- ◯ Riverside Christian College
- ◯ St George State High School
- ◯ Other

Put the name of your base school, that is the school you are enrolled in as a full-time student (not your school of distance education if you are a school based student). If you are home-schooled please select the correct field.

Are you undertaking a full time study load? (6 subjects or equivalent - this includes school based traineeships and school based apprenticeships) *

Please choose **only one** of the following:

- ◯ Yes
- ◯ No

How long have you been at your present school? *

ⓘ Choose one of the following answers
Please choose **only one** of the following:

- ◯ More than three (3) years
- ◯ Three (3) years
- ◯ Two (2) years
- ◯ One (1) year
- ◯ Less than one (1) year

How many online courses are you currently undertaking? *

ⓘ Choose one of the following answers
Please choose **only one** of the following:

- ◯ One (1)
- ◯ Two (2)
- ◯ Three (3)
- ◯ More than three (3)

If you have already participated in an online course, have you successfully completed or received a minimum "C" Grade or "WTC" (Working Towards Competency) in an online course prior to your current online course? *

Choose one of the following answers
Please choose **only one** of the following:

- ◯ Yes, I have received a pass grade
- ◯ No, I did not receive a pass grade
- ◯ This is my first online course

Are you repeating your current year level? *

Choose one of the following answers
Please choose **only one** of the following:

- ◯ No
- ◯ Yes, repeating Year 10
- ◯ Yes, repeating Year 11
- ◯ Yes, repeating Year 12

What subject/s are you studying online? *

ⓘ Check all that apply
Please choose **all** that apply:

- [ ] Senior English (OP)
- [ ] Mathematics A (OP)
- [ ] Mathematics B (OP)
- [ ] Mathematics C (OP)
- [ ] Biology Science (OP)
- [ ] Chemistry (OP)
- [ ] Physics (OP)
- [ ] Geography (OP)
- [ ] History (OP)
- [ ] Philosophy (OP)
- [ ] Other (OP)
- [ ] English Communication (SAS)
- [ ] Prevocational Mathematics (SAS)
- [ ] Science in Practice (SAS)
- [ ] Other (SAS)
- [ ] Unit of Competency (VET) = Unit only
- [ ] Certificate I Level Qualification (VET) e.g. Certificiate I in Engineering
- [ ] Certificate II Level Qualification (VET) e.g. Certificate II in Business
- [ ] Certificate III Level Qualification (VET) e.g. Certificate III in Agriculture
- [ ] VET Course higher than Certificate III Level Qualification (VET) e.g. Certificate IV in Tourism
- [ ] University Course (Higher Education)

Please chose the one online course that the rest of your answers will relate to.

Who delivers your online course? *

ⓘ Choose one of the following answers
Please choose **only one** of the following:

- ◯ Brisbane School of Distance Education
- ◯ Charleville School of Distance Education
- ◯ Longreach School of Distance Education
- ◯ Mount Isa School of the Air
- ◯ Riverside Christian College
- ◯ Morton Christian College
- ◯ Jubilee Christian College
- ◯ TAFE
- ◯ Private RTO
- ◯ Other
- ◯ Don't know

What reason best describes why you are undertaking an online course. *

ⓘ Choose one of the following answers
Please choose **only one** of the following:

- ◯ My school is too small and does not offer enough OP, SAS or VET courses for me to choose from
- ◯ My school does not offer the subject I wanted
- ◯ My school offers the subject but I have a timetable clash
- ◯ My school offers the subject but I prefer to take it online
- ◯ I transferred from another school and my new school does not offer this subject
- ◯ I am a home schoooing student and my course is a part of my full time load
- ◯ I am undertaking a university early entry program
- ◯ Other reason

What best describes how you engage in your online course: *

ⓘ Choose one of the following answers
Please choose **only one** of the following:

- ◯ I have a timetabled online session/s that I am required to attend (i.e BSDE 8:00am class)
- ◯ I engage with my online course during my timetabled spares
- ◯ I engage in my online course at home/other times
- ◯ It is a part of my full time home-schooling studies load

What location best describes where you mostly engage with your online course? *

ⓘ Choose one of the following answers
Please choose **only one** of the following:

- ◯ At school in the school library (in an open space)
- ◯ At school in the school library (in a separate study room)
- ◯ At school in a designated room for online study
- ◯ At school in a general class room (where other students come to study i.e. for their study line)
- ◯ At school, I join another class (i.e. sit in the back of another timetabled class)
- ◯ I only access my online course at home
- ◯ I access my course at home as a home-schooling or distance education student
- ◯ Other reason

If you undertake more than one online course, from this point foward, chose one of your courses to answer the remaining questions in this survey.

How long do you spend each week working on your online course content (including any live sessions or recorded sessions you view). *

Choose one of the following answers
Please choose **only one** of the following:

- ◯ Less than one (1) hour
- ◯ Between one (1) and three (3) hours
- ◯ Between three (3) and five (5) hours
- ◯ Between five (5) and ten (10) hours
- ◯ More than ten (10) hours

The technology I use mostly to access my online course is best described as: *

Choose one of the following answers
Please choose **only one** of the following:

- ◯ Desktop computer
- ◯ A laptop computer
- ◯ An iPad (or similar mobile device)
- ◯ A smart phone

Rate the statements from strongly agree through to strongly disagree as they relate to the resources and content in your online course. *

Please choose the appropriate response for each item:

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
The IT hardware I have been supplied with to complete online learning is of high quality	◯	◯	◯	◯	◯
The internet speed is sufficient for online learning (e.g. I can easily stream content)	◯	◯	◯	◯	◯
I would rate the quality of the resources in my online course as high quality	◯	◯	◯	◯	◯
Multimedia resources work well when I use them	◯	◯	◯	◯	◯

How helpful in delivering content were these tools: *

Please choose the appropriate response for each item:

	Very helpful	Somewhat helpful	Neutral	Not helpful at all	Not Applicable
Audio files	◯	◯	◯	◯	◯
Email	◯	◯	◯	◯	◯
Live sessions (web conferencing)	◯	◯	◯	◯	◯
Recorded lectures	◯	◯	◯	◯	◯
Video resources	◯	◯	◯	◯	◯
Discussion forum/blog	◯	◯	◯	◯	◯
Text (word & PDFs)	◯	◯	◯	◯	◯
PowerPoints & other presentation tools	◯	◯	◯	◯	◯
Learning objects (interactive tools)	◯	◯	◯	◯	◯

How often were these tools used to deliver content in your online course: *

Please choose the appropriate response for each item:

	Always	Quite often	Often	Not very often	Never
Audio files	◯	◯	◯	◯	◯
Email	◯	◯	◯	◯	◯
Live sessions (web conferencing)	◯	◯	◯	◯	◯
Recorded sessions	◯	◯	◯	◯	◯
Video resources	◯	◯	◯	◯	◯
Discussion forum/blog	◯	◯	◯	◯	◯
Text (word & PDF)	◯	◯	◯	◯	◯
PowerPoints and other presentation tools	◯	◯	◯	◯	◯
Learning objects (interactive tools)	◯	◯	◯	◯	◯

What other types of online learning activites are used in your online course. *

Please write your answer here:

You can use dot points or short phrases if you like.

Which statement best describes who supervises you when you engage in your online course: *

Choose one of the following answers
Please choose **only one** of the following:

- ◯ A qualified teacher is assigned to my supervision (option for non home-schooler)
- ◯ A teacher aide or support staff member is assigned to my supervision at school (option for non home-schooler)
- ◯ I am not supervised at school (option for non home-schooler)
- ◯ I am supervised at home (option for non home-schoolers)
- ◯ I am not supervised at home (option for non home-schoolers)
- ◯ I am supervised at home by my home-schooling supervisor (option for for homeschoolers)
- ◯ I am not supervised at home by a home-schooling supervisor (option for homeschoolers)

How often do you visit your online course space? *

Choose one of the following answers
Please choose **only one** of the following:

- ◯ More than once a day
- ◯ Once a day
- ◯ 3-5 times a week
- ◯ 5-7 times a week
- ◯ Once a fortnight
- ◯ Hardly ever

What resources and content have you found most helpful in your online course and how were they helpful to you? *

Please write your answer here:

What resources and content do you find difficult in your online course and what was difficult about them? *

Please write your answer here:

Rate the following socialisation opportunities as they relate to your online course. *

Please choose the appropriate response for each item:

	Very often	Often	Sometimes	Not very often	Never	Not Applicable
Weekly Live sessions (e.g. BSDE live sessions)	○	○	○	○	○	○
Help from my online peers	○	○	○	○	○	○
Help from my campus class friends for help in my online course	○	○	○	○	○	○
Online group work	○	○	○	○	○	○
Feedback from my online teacher about my work and progress in my online course	○	○	○	○	○	○
Feedback from my campus supervisor about my work and progress in my online course	○	○	○	○	○	○
Feedback from my home-schooling supervisor about my work and progress in my online course	○	○	○	○	○	○

Rate the quality of socialisation in your online course. *

Please choose the appropriate response for each item:

	Very high	High	Neutral	Low	Very low
Sense of community in my online course as	◯	◯	◯	◯	◯
Communication with my online teacher as	◯	◯	◯	◯	◯
Communication with other online students as	◯	◯	◯	◯	◯
Communication with support staff (i.e. online school administrators)	◯	◯	◯	◯	◯

What ways have you instigated communicated with your online teacher? *

ℹ Check all that apply

Please choose **all** that apply:

- ☐ Email
- ☐ Text message
- ☐ Video conference/Skype (live session)
- ☐ Discussion forum/blog
- ☐ Phone call
- ☐ Face to face (in person e.g. during a site visit)
- ☐ Other

Rank the communication methods in the order you prefer that they be used in an online course. *

All your answers must be different and you must rank in order.
Please number each box in order of preference from 1 to 6

- [ ] Email
- [ ] Text message
- [ ] Video conferencing/Skype (live session)
- [ ] Discussion forum/blog
- [ ] Phone call
- [ ] Face to face (in person e.g. during a site visit)

What ways has your online teacher communicated with your parents/caregivers? *

Check all that apply
Please choose **all** that apply:

- [ ] Email
- [ ] Text message
- [ ] Video conferencing/Skype
- [ ] Face to face
- [ ] By phone
- [ ] I'm not sure
- [ ] They have not communicated with them

Does your online course include any face to face delivery (i.e. Certificate I Engineering can be completed with an online theory component and face to face pracs) *

ⓘ Comment only when you choose an answer.
Please choose all that apply and provide a comment:

- [ ] Yes
- [ ] No
- [ ] Other (please explain)

What barriers do you experience with regards to socialisation and communication in your online course? Please expalin. *

Please write your answer here:

What things are helpful with regards to socialisation and communication in your online course and how was it helpful? *

Please write your answer here:

My online teacher... *

Please choose the appropriate response for each item:

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Is interested in my ideas	◯	◯	◯	◯	◯
Gives me clear expectations about what needs to be done	◯	◯	◯	◯	◯
Checks in with me to ensure I understand my work	◯	◯	◯	◯	◯
Can be counted on to help when I need it	◯	◯	◯	◯	◯
...and I have a good rapport	◯	◯	◯	◯	◯
Facilitates connections between online students	◯	◯	◯	◯	◯

Describe the types of support you receive from your online teacher? *

Please write your answer here:

Describe the types of support you receive from your campus supervisor or your home-schooling supervisor with regards to your online course. *

Please write your answer here:

If you have live online sessions please answer the following. If you do not have live online sessions please go to the next question.

Thinking about your online live session:

*

Please choose the appropriate response for each item:

	Most/all	Some	Occasionally	Never
The teacher talks throughout most of the session	○	○	○	○
The teacher explains lesson content assignments/homework	○	○	○	○
The teacher shows the class multimedia presentations (ppt, video)	○	○	○	○
Students present to the class e.g. multimedia presentations	○	○	○	○
We communicate with experts/guests	○	○	○	○
The teacher asks questions	○	○	○	○
The teacher directs questions to individual students	○	○	○	○
Students ask the teacher questions	○	○	○	○
The teacher facilities discussion between students	○	○	○	○
We experience technical difficulties	○	○	○	○

Have you had more than one online teacher for the one subject?

If so how many *

ⓘ Comment only when you choose an answer.
Please choose all that apply and provide a comment:

☐ No, I have only had the same teacher

☐ Yes, I have had more than one teacher for this class (please specify how many)

When you ask your online teacher a question, how long does it usually take until you get a reply? *

ⓘ Choose one of the following answers
Please choose **only one** of the following:

◯ Within a couple of hours
◯ Within the same day
◯ Between 1-2 days
◯ Between 3-4 days
◯ Between 4-7 days
◯ More than 7 days

While you are waiting for a reply from your online teacher what best describes what you do next: *

ⓘ Choose one of the following answers
Please choose **only one** of the following:

- ◯ I finish studying the subject I am stuck on and do other school work
- ◯ I keep working on the same subject I am stuck on but find other work that I can do for that subject
- ◯ I ask my campus/home supervisor for help
- ◯ I ask another campus teacher for help (option for non home-schoolers)
- ◯ I ask a classmate from my online course for help
- ◯ I ask a campus classmate from one of my other subjects for help
- ◯ I stop studying all together and go do something else

Thinking about how you usually relate to your campus teachers, what barriers to your teacher/student relationship do you see with your online teacher? *

Please write your answer here:

What do you think contributes to a positive teacher/student relationship with an online teacher? *

Please write your answer here:

Compared to your face to face classes how would you rate online learning? *

ⓘ Choose one of the following answers
Please choose **only one** of the following:

- ◯ Much harder than face to face classes
- ◯ Somewhat harder than face to face classes
- ◯ About the same level of difficulty as my face to face classes
- ◯ Easier than face to face classes
- ◯ Much easier than face to face classes
- ◯ Not relevant: I am a home-schooler

Rate the significance of these factors as they relate to online learning:

*

Please choose the appropriate response for each item:

	Extremely important	Very important	Somewhat important	Not that important	Not important at all	Not Applicable
Access to technical support	◯	◯	◯	◯	◯	◯
Enough time to engage with your online course	◯	◯	◯	◯	◯	◯
Assistance from your online teacher	◯	◯	◯	◯	◯	◯
Assistance from your campus/home supervisor	◯	◯	◯	◯	◯	◯
Orientation in online learning	◯	◯	◯	◯	◯	◯
Range of learning experiences	◯	◯	◯	◯	◯	◯

Rate how you feel about the following issues as they relate to online learning: *

Please choose the appropriate response for each item:

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I am unsure of my responsibilities in online learning	◯	◯	◯	◯	◯
Online learning is effective	◯	◯	◯	◯	◯
I receive a high level of support from my online teacher	◯	◯	◯	◯	◯
I receive a high level of support from my campus supervisor	◯	◯	◯	◯	◯
I feel I have the necessary technology skills to undertaking online learning	◯	◯	◯	◯	◯
Online learning motivates me to want to study	◯	◯	◯	◯	◯

Thinking about your online course, in a typical school week:

*

Please choose the appropriate response for each item:

	More than 5 times	3-4 times a week	1-2 times a week	Never/rarely	Not applicable
I instigate email contact with my online teacher	◯	◯	◯	◯	◯
I have a 1:1 session with my online teacher	◯	◯	◯	◯	◯
I approach a campus based teacher for help with the content from my online course	◯	◯	◯	◯	◯
I use a spare to engage with my online course work	◯	◯	◯	◯	◯
I access the virtual learning space	◯	◯	◯	◯	◯
I access websites recommended by my online teacher	◯	◯	◯	◯	◯

What problems have you experienced in your online course:*

ⓘ Check all that apply
Please choose **all** that apply:

- [ ] Personal motivation to study
- [ ] Interruptions from others around me (e.g. when I am studying)
- [ ] Time pressures
- [ ] Technical problems
- [ ] Connectivity issues
- [ ] Understanding content/tasks
- [ ] Feedback from online teacher
- [ ] Question turnaround time
- [ ] Felt alone/isolated
- [ ] Could not navigate online learning space
- [ ] I don't feel comfortable to ask my online teacher questions
- [ ] Difficulties with course administration
- [ ] Other:

If you had the choice of a face to face class or online class, which would you prefer?

In the box below please explaine why you would prefer this mode?

*

ⓘ Choose one of the following answers
Please choose **only one** of the following:

- ◯ Face to face class
- ◯ Online class
- ◯ Blended delivery (both face to face and online)
- ◯ Not relevant: I am a home-schooler

Make a comment on your choice here:

What things do you enjoy or like about online learning? *

Please write your answer here:

What things do you find not helpful about online learning? *

Please write your answer here:

What things help you succeed in online courses? *

Please write your answer here:

What is one thing that you now know about online learning that you wish you had known before you started your online class. *

Please write your answer here:

If you would like to enter the iTunes prize draw (total prze pool of over $400) please enter:

Your school name

Your school email adress e.g. studentname@eq.edu.au

If you are homeschooled please just provide the email address you use for your school work.

Please write your answer here:

Thank you for taking the time to complete these questions. I'm looking forward to looking at your responses and to the follow up focus group sessions. Mr Jeffs

31.05.2019 – 11:42

Submit your survey.
Thank you for completing this survey.

APPENDIX F. PHASE 2 FOCUS GROUP QUESTIONS

Socialisation & Communication

Question 1. What do you think might explain the decrease of important of socialisation and communication with peers?

Question 2. There were many references to time delay; can you tell us a bit more about what the time delay issue might be and what impact do you think this has in communication in an online course?

Teacher-student Relationship

Question 3. What could teachers to build stronger relationships in online learning?

Question 4. What do you think students can do to help build a stronger teacher student relationship?

Resources & Content

Question 5. What is one-way live sessions or recorded sessions can be improved to help your learning?

Challenges to Online learning

Question 6. Can you tell us a little but more about the challenges you face with motivation and what do you think schools can do to help you with that motivation

Enablers (helpful) for online learning

Question 7. Can you tell us a bit about how flexibility in online learning is helpful for you as a student?

Other Feedback

Question 8. Is there anything else that we need to know about as we try to deliver material online to young people?

APPENDIX G. INFORMED CONSENT

Please sign and return the slip below and keep this document for your records

TITLE OF PROJECT:

What are Queensland regional, rural and remote senior secondary students' perceptions of enablers and barriers to successfully completing online courses?

APPROVAL NUMBER: H17REA130

Student & Guardian, Questionnaire & Focus Group Consent Form:

Parent/Guardian Name: _____ Date: _____

Parent Guardian Signature: _____

Student Participant Name: _____

Student Signature: _____

Send to David Jeffs at: w0068202@umail.usq.edu.au

STUDENT & PARENT/GUARDIAN INFORMATION & CONSENT FORM

TITLE OF PROJECT:

What are Queensland regional, rural and remote senior secondary students' perceptions of enablers and barriers to successfully completing online courses?

PRINCIPAL SUPERVISOR: Professor Peter Albion Peter.Albion@usq.edu.au (07) 4631 2321 0402 046 749
STUDENT RESEARCHER: Mr David Jeffs w0068202@umail.usq.edu.au (07) 4123 1930 0447 412 821

Dear Parent/Guardian

Because your child is taking at least one online course as a part of their studies, we are inviting them to participate in some research about their experience of online learning.

Why is this research being done?

After reviewing research literature about young people participating in online courses, it's been noted that there is very little research from the student's point of view. As schools access more and more online courses for their students it is important that we understand what is working and what is not working for students when they study through an online mode. This research will ask students about their online learning experience so that we can improve their online learning experience.

Are there any risks involved in this research?

There are no anticipated risks beyond the normal day-to-day experience associated with participation in schooling.

What would your child have to do?

Students will complete one anonymous online survey (approximately 40 minutes) and participate in one follow up focus group session (approximately 70 minutes) with student feedback recorded as anonymous. Students who participate in the research go into a draw for a range of iTunes gift vouchers with a prize pool of over $400.

What would you have to do?

As a parent/career, you would need to sign and return the permission slip below to allow your child to participate in this research.

What are the benefits of the research to you/ your school/ your child/ school community?

It is anticipated that this research will help online providers better understand what students need when they undertake an online course. It is also anticipated that educators will have a better understanding of what support young people need when they undertake an online course.

How will your confidentiality be protected?

All comments and responses will be treated confidentially unless required by law. For the anonymous questionnaire the names of individual persons are not required in any of the responses, except for the final space where students can submit their names to be entered into the iTunes draw. Student names will not be associated with their answers. Any data collected as a part of this project will be stored securely as per the University of Southern Queensland's Research Data Management policy.

Your consent
By signing this consent form you are indicating your willingness for your child to participate in the research project as it is explained in this letter. Participation is completely voluntary, and you are free to refuse consent altogether without having to justify that decision. Additionally you can withdraw your consent after first giving it and discontinue participation in the study at any time without giving a reason or with consequence to your child.

More questions?
Any questions regarding this project should be directed to the researcher David Jeffs (contact details above) or the research supervisor Professor Peter Albion (details above).

Ethics
This study has been approved by the Human Research Ethics Committee of The University of Southern Queensland as well as The Department of Education and Training Research Division (State School's) approval number: H17REA130.

Complaints about the research
If you have any concerns or complaints about the ethical conduct of the project you may contact the University of Southern Queensland Ethics Coordinator on (07) 4631 2690 or email ethics@usq.edu.au. The Ethics Coordinator is not connected with the research project and can facilitate a resolution to your concern in an unbiased manner. Any complaint or concern will be treated in confidence and fully investigated.

What do you have to do?
Completely read this information sheet and be sure you understand it. If you would like your child to participate, please complete the consent form below, cut this section off and return to the researcher. Keep the information section for your records.

Thank you for considering this invitation and we look forward to hearing from you.

Signatures

Principal Researcher:
Professor Peter Albion

Student Researcher:
David Jeffs

APPENDIX H. PHASE 2 FOCUS GROUP RECORDING TRANSCRIPT

Questions 1 & 2 RE: Socialisation and communication

Researcher: "What do you think might explain the decrease of important of socialisation and communication with peers?"
Student 1: Because I guess I would trust them a bit more than the students, because they are teaching the stuff and the kids are learning.
Student 2: The only time I really have contact with students is if I know them really well or if I have like their own phone number or something. Or occasionally, if we have like a webinar with our teachers I occasionally talk to them then, but usually it's mainly usually just contact with teachers.
Student 3: For me, it wasn't really about the interactions with other students, I'm more needing to make contact to teachers with queries and questions that I have and concerns with my work, so contacting students wasn't really a priority with me.
Student 4: I think it very obviously would be that through external studies, you of coarse have that direct talking to the teacher through tutorials and through your lectures, however, within your student social situations you don't have that connection. You might have a discussion board or you might have a chat, but in reality, you don't have that same connection through that text-based socialisation whereas you've got a verbal socialisation with your tutor.

Researcher: "There were many references to time delay; can you tell us a bit more about what the time delay issue might be and what impact do you think this has in communication in an online course?"
Student 1: I don't think time impacted a big deal because our teachers responded pretty quickly, but because when I do my assignments I always try to start them a week or so before they are due so if I have any questions I can email my teachers and they're responding within the day, within about two hours.
Student 2: The way we get around the time delay is we, say for example, we start an assessment a while before the due date so there's usually like one or two people doing the assessment so they're aren't as many questions which are going to the teacher at the time so he/she has more time to focus on one student.
Student 3: For me, I do the five OP subjects online, so if I have various queries and I've emailed all my teachers and I'm waiting for responses, I can't really go from there if I haven't got an answer from teachers, so I'm just stuck with my work if I haven't got a response I can't continue if I'm stuck somewhere with my work. I felt a lack of support when I first started, it was very overwhelming in that I wasn't ever really guided in what to expect or how to deal with it, and going from full time at a school to full time at distance Ed, it was just very overwhelming. Going from having full time contact with my teachers to only various contact the webinars and emails, I don't find that very helpful.
Student 4: It didn't have much on an impact because I found that I didn't personally go to my tutor for a lot of help because I didn't personally feel very connected to my tutor, so I feel that I didn't ask a lot of questions just because of that disconnect so I guess it didn't really affect me as much. For the course I did of course I had my online lectures and online tutorials, but there was no interaction outside of that. I didn't feel like the people who were delivering the lectures or tutorials had any personality, I felt like I might as well have been reading of slide shows and then working the rest out for myself. There was just that disconnect between me and my tutor that I just didn't feel comfortable asking questions.

Questions 3 & 4 RE: Teacher-student relationship

Researcher: The survey said that there were barriers in the teacher student relationship, and that was because there was no face to face and some students said there was no speech/audio. In terms of contributing positively to the teacher student relationship, your results said that conversation and good feedback was important. Researcher: "What could teachers to build stronger relationships in online learning?"
Student 1: They can do weekly webinars where you can just ask them any questions that you have about the subject and they can give good feedback on your assignments and make it not just like grammerly, but do good personal feedback.
Student 2: Also, making sure that if there's like a school outing or an excursion, make sure that the teachers are encouraging their students to come along, and if they do come along, make the effort to talk to them and get to know them a bit more.
Student 3: If I would've received more contact over the phone. I never spoke to any of my teachers, only through the live sessions that we did, and that was never a personal connection with the teacher, it was just delivering of the session. There was no personal touch of them trying to understand my needs of my learning or needing help understanding. I think it would've been easier to be introduced to the teachers rather than just knowing who they are and that probably would've made me feel more comfortable with contacting them; me knowing them and them knowing me.
Student 4: I reckon it would been helpful to have literally just audio speech. I would feel so much more connected to someone of I'm actually talking to them instead of just texting per say. I know that face to face teaching isn't a reasonable goal to have so I think that audio is the next best thing.

Researcher: "What do you think students can do to help build a stronger teacher student relationship?"
Student 1: Ask questions and don't be afraid. A lot of students think that they shouldn't ask the question because it's a stupid question and they're afraid to talk to the teachers, but teachers are nice and they even respond to 'stupid' questions.
Student 2: If there is a weekly webinar, the students make it a priority and make an effort to attend every week.
Student 3: From my perspective, I'm not sure what else I could do more as a student because I don't think I'm comfortable enough to be the one making the first step of interaction with my teacher like going to call my teacher, that's an intimidating thing. Rather, me trying to reach out via email and not being contacted.
Student 4: I found that within my course there are a couple of students that set up our own group messenger chat where went through and asked question, we discussed the concepts and we helped each other with assessments. I found that that helped so much just because I was able to socialize with my peers as well as get help from [people actually doing my course independently of the university I was going to. Researcher: specific question to student one. "How often are these webinars?" Student 1: It's slightly different for different subjects, but for mine, biology, they are weekly and they go for about 15 minutes to half an hour, but for some of my subjects they don't. I also do modern history, but there's not a lot you can explain in modern history. I did film and TV too, and I had, probably, fortnightly webinars.

Question 5 RE: Resources and content

Researcher: The responses were that 55% of the students have live sessions and about 36% have recorded sessions. When you guys were able to answer questions in what's called the open field area answers where you could just write whatever, 70% of you guys actually referenced web sessions or recorded sessions. Researcher: "What is one-way live sessions or recorded sessions can be improved to help your learning?"
Student 1: I prefer live sessions almost more because if you have any questions you just use the chat bit and ask them straight away and they respond. I also enjoy recording ones because they sometimes give more detail and you can more easily come back to them, even though they do record the webinars. Usually the little videos are one specific thing.
Student 2: Something they could really probably improve on in my eyes is having more regular webinars for each of the courses and then also have, during assessment tasks, and each assessment task has like a 20 minute video where the teacher just explains what needs to be dome. So pretty much, if there's a task sheet, going through the task sheet and explain it. Having at the end, an example of what used to be done.
Student 3: The sessions that we had, we couldn't really interrupt the teachers. There's a message board, but of the teacher is still delivering they kind of disregard that and keep talking or may not fully understand what I'm querying because I'm just writing a message on the side. And I can't really express what I'm not understanding, or they may misunderstand what I've written so it's hard to say what I need help with. I think phone calls would be a lot easier to communicate as a follow up, and maybe double checking that I actually understand it now because they'll go over it again in the last session, but its saying the exact same thing twice, which, if I didn't get it the first time, resaying it doesn't help me understand it more. It would help engage us if the teachers would check up on us more and make sure that we are actually understanding. I feel that they just delivered what they had to and that was their job done.
Student 4: The actual program that we used to run the recording sessions and the live sessions through blackboard. I found that blackboard and e-work , a lecture recording program, in itself doesn't run very well because it was stutter, had problems loading and things like that make it not very smooth. I made sure that it wasn't problems with m connection, it's just the program. So I Guess just going out and ironing out the kinks within the actual lecturer recording program and the online streaming stuff is probably what needs to happen.

Question 6 RE: Challenges to online learning

Researcher: "Can you tell us a little but more about the challenges you face with motivation and what do you think schools can do to help you with that motivation?"
Student 1: What schools can do to help with motivation is making the content more enjoyable and finding more fun leaning activities. For me I don't really have a problem with motivation most times because I'm home schooled, as soon as I finish my work I get to do pretty much whatever I want; I have a certain amount of stuff that I need to get done in a day, after that I can just platy around and just do anything I want to.
Student 2: I don't really struggle with motivation because, of course, I've done it all my life and I'm got used to the fact that I need to get it done. The webinars also improve your motivation because they explain it if you're struggling. My main thing is that if I find something hard when I'm doing my course, then I'll lack motivation but I have to just do it. It's more like saying I have to do this; if I don't do it today, I'm going to have to do it tomorrow so why bother fussing over it when you can just do it now.
Student 3: I don't think really struggled with motivation. I worked hard, I think I just got discouraged when I was overwhelmed and I was reaching out to teachers for help and I didn't feel like I had that support so I think that was the only reason I lost my motivation; from not receiving the support I needed.
Student 4: Although you can set up classes, what I did with my university external studies is very different to my school one. Although you have a set time in which lectures were uploaded, I still need to be there for them, whereas at school you still need to be there for every class and ready to go. So although I wasn't there when I needed to, I knew that I'd always push it pack; I always went back to it. I guess that motivation wasn't really a problem for me but I guess for some other students who may struggle with motivation I guess, I don't know, the best way to speak to motivation for me is kind of clamp down, but that's just my personal view, so I don't really have any idea.

Question 7 RE: Helpful for online learning

Researcher: "Can you tell us a bit about how flexibility in online learning is helpful for you as a student?"
Student 1: It's helpful because like if you need to go shopping or you need to help your parents during the day when most people are at school, you can do school later on in the evening, or if you have something else like a social activity you can still go to that and do school later.
Student 2: Before online, there was a lot more flexibility because we did paces and you'd only have to do a certain amount of paces in a year. You could change holiday times, like instead of doing a ten week term, you could do a six week term, have a week of holidays then work an extra week in the actual holidays. Now that it's going online and being in a higher grade there's not as much flexibility like that because you have certain assessment task due dates, but you can go out to say, Disneyland on the Monday and instead of going to school on the Monday, you can do that work on like a Saturday because you have that flexibility.
Student 3: I'm doing home-school because of the home situation that I'm in so flexibility wasn't really my main aim or doing home-school; it's just how it worked out, but it was helpful. If I did start work early I could finish my work early, but that wasn't my main motivation for home-school. I did like the flexibility. I liked being able to work at my own pace. I like that if I'm in the middle of something I can continue and get through that rather than having to stop because the period's over or something, I can just keep working.
Student 4: I found that the flexibility is absolutely is a gift but also a curse. It's absolutely phenomenal because I can choose to study when I need to around my schedule but it also sucks because I find my motivation to do that, which again overlaps with the previous question of course. So although it was really great for me to do outside of school and when I wasn't studying, it also very much a motivation problem for kids that don't really want to do it per say.

Question 8 RE: Other Feedback

Researcher: Is there anything else that we need to know about as we try to deliver material online to young people?
Student 1: Make it interactive; make it enjoyable for the students. Also have more interaction with the teachers and make times where you're having an actual face to face meeting so to speak, with your students where you make the effort to interact with them. Get a good student-teacher relationship going. Even on excursions just talk to them about school and their day to day school; make an effort to build a relationship with them. That way, when you go on the webinar, it makes it easier to talk with them.
Student 2: Sometimes don't just talk about school; like ask how they're week is going and what are your plans.
Student 3: I think just providing more support for the students because are not going to want to try if they're not feeling supported in what they're doing. Reaching out to the kids is probably the main thing I would say and following up if they query things.
Student 4: I think, personally, it's one thing to run off slide shows. I find that interactive activates help so much more especially if I'm doing an external study interactive activity with my tutor or with my teacher just really sort of jump start learning for me. I enjoyed some aspects of online learning but not others. I really personally struggled with not having a relationship with my teacher or my tutor and sort of just seeing them as an information regurgitation kind of thing. This was emphasized because I am so accustomed to having amazing relationships with my teachers. I think that when I take that into account I think that even just having a relationship with teacher is just a "oh yeah I know who you are, I know how you interact with other students". Even just being around a teacher and not having special interactions just adds so much comfortability for me and being comfortable really means that I can learn a lot easier.

APPENDIX I. PRINCIPAL INFORMED CONSENT

PRINCIPAL INFORMATION SHEET

TITLE OF PROJECT: *What are Queensland rural and remote senior secondary students' perceptions of enablers and barriers to successfully completing online courses?*

PRINCIPAL SUPERVISOR: Professor Peter Albion; Peter.Albion@usq.edu.au; (07) 4631 2321; 0402 046 749

STUDENT RESEARCHER: Mr David Jeffs; d-jeffs@bigpond.com; (07) 4123 1930; 0447 412 821

Dear principal,

We are inviting you to participate in a research project to better understand secondary students' experiences of learning when undertaking online learning.

Why is this research being done?

It has been identified through a review of the relevant literature that more work needs to be done to better understand Australian secondary students' attitudes towards online learning. With more and more students undertaking online learning through schools of distance education and Registered Training Organisations (RTO's) we need to understand what is helpful and what is not helpful for senior secondary students undertaking online courses.

Are there any risks involved in this research?

There are no anticipated risks beyond the normal day-to-day experience associated with participation in day to day schooling.

What would your school/ students have to do?

At a school level, give permission for students to access an anonymous online survey of 60 questions (approximately 45 minutes), and allow students to participate in a follow up focus group session (approximately 70 minutes).

What would you have to do?

As a supervising staff member of students undertaking online learning, you are being asked to participate in one 30 minute short interview regarding your observations of students participating in online learning.

What are the benefits of the research to you/ your school/ your child/ school community?

It is expected that this project will directly benefit key stakeholders to better understand students' online learning experience. It may also benefit The Department of Education & Training, the research community, Schools of Distance Education and Registered Training Organisations in a deeper understanding of secondary student's perceptions of online learning.

How will your confidentiality be protected?

All comments and responses will be treated confidentially unless required by law. For the anonymous questionnaire, focus groups and interviews of the names of individual persons are not required in any of the responses.

Any data collected as a part of this project will be stored securely as per University of Southern Queensland's Research Data Management policy.

Your consent

By signing the consent form you are indicating your willingness to participate in the research project as it is explained in this letter. Participation is completely voluntary,

and you are free to refuse consent altogether without having to justify that decision, or to withdraw your consent after first giving it and discontinue participation in the study at any time without giving a reason.

More questions?
Any questions regarding this project should be directed to the researcher David Jeffs (contact details above) or the research supervisor Professor Peter Albion (details above).

Ethics
This study has been approved by the Human Research Ethics Committee of The University of Southern Queensland and Central Office of the Department of Education and Training.

Complaints about the research
If you have any concerns or complaints about the ethical conduct of the project you may contact the University of Southern Queensland Ethics Coordinator on (07) 4631 2690 or email ethics@usq.edu.au. The Ethics Coordinator is not connected with the research project and can facilitate a resolution to your concern in an unbiased manner.

Any complaint or concern will be treated in confidence and fully investigated.

What do you have to do?
Please read this Information Statement and be sure you understand it. If you would like to participate, please complete the attached consent form and return to the researcher. Keep the Information Statement for your records.

Thank you for considering this invitation and we look forward to hearing from you.

Signatures

Principal Researcher:

Student Researcher:

Please keep this document for your records

END OF PAPER