

2018

## The online student experience: An exploration of first-year university students' expectations, experiences and outcomes of online education

Melanie Henry  
*Edith Cowan University*

Follow this and additional works at: <https://ro.ecu.edu.au/theses>



Part of the [Higher Education Commons](#), and the [Online and Distance Education Commons](#)

---

### Recommended Citation

Henry, M. (2018). *The online student experience: An exploration of first-year university students' expectations, experiences and outcomes of online education*. Edith Cowan University. Retrieved from <https://ro.ecu.edu.au/theses/2059>

This Thesis is posted at Research Online.  
<https://ro.ecu.edu.au/theses/2059>

# Edith Cowan University

## Copyright Warning

You may print or download ONE copy of this document for the purpose of your own research or study.

The University does not authorize you to copy, communicate or otherwise make available electronically to any other person any copyright material contained on this site.

You are reminded of the following:

- Copyright owners are entitled to take legal action against persons who infringe their copyright.
- A reproduction of material that is protected by copyright may be a copyright infringement. Where the reproduction of such material is done without attribution of authorship, with false attribution of authorship or the authorship is treated in a derogatory manner, this may be a breach of the author's moral rights contained in Part IX of the Copyright Act 1968 (Cth).
- Courts have the power to impose a wide range of civil and criminal sanctions for infringement of copyright, infringement of moral rights and other offences under the Copyright Act 1968 (Cth). Higher penalties may apply, and higher damages may be awarded, for offences and infringements involving the conversion of material into digital or electronic form.

**The Online Student Experience: An exploration of first-year university students'  
expectations, experiences and outcomes of online education**

This thesis is presented for the degree of  
**Doctor of Philosophy**

**Melanie Henry**

Edith Cowan University

School of Arts and Humanities

2018

## USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

## Abstract

Online higher education presents a critical opportunity to extend and diversify the student body. The Online Student Experience (OSE), and online student outcomes, however, remain shrouded in ambiguity. The literature presents conflicting reports of online education (OE) quality, confounded by a lack of appreciation for potential differences between online and on-campus education, and a diversity of interpretations for what constitutes OE. The present research conceptualises OE as representing university courses that require students to interact with instructors and course materials via the internet, with no expectation of attending a university campus. A broad student-centred perspective is notably lacking from the OE literature, with limited consideration of students' expectations and perceptions, students' experiences beyond the curriculum, and the role of students' experiences in online student outcomes. Instead, prior research has relied on assumed benefits and limitations, or researcher-determined measures of online student suitability and online course quality. The first-year transition may be especially challenging for online students, furthermore, yet understanding of the online first-year experience has been limited to extrapolations from on-campus literature. In the absence of a deep, student-centred understanding of first-year online students' expectations and experiences, combined with clear evidence for what may contribute to a quality OSE; it remains unclear whether OE presents a viable method of education, and how online student outcomes might be enhanced.

A deeper understanding of the OSE is critical to ensure universities attract and retain a diverse range of students. The present research contributes to this understanding, offering a rich description of how first-year students at an Australian public university constructed their lived experiences of OE, and attributed meaning to these experiences. Adopting qualitative inquiry and phenomenological case study methodology, online students' expectations, experiences and outcomes were explored through in-depth online interviews with 43 students; and resultant transcripts analysed using thematic analysis.

Six themes were identified to describe students' lived experiences of OE: learner *Motivation, Ability and Circumstances*; and institutional *Interaction*,

*Curriculum and Environment*, forming a *Motivation, Ability, Circumstances – Interaction, Curriculum, Environment*, or *MAC-ICE*, thematic structure of the OSE. Discrete expectations and experiences formed sub-themes corresponding to each of these themes. Students' experiences varied considerably, nonetheless, with no consistent explanation for how all first-year university students might experience OE, corresponding to frequent inaccurate expectations.

Each theme was perceived to have informed students' outcomes, either directly contributing to their learning, performance, satisfaction or retention, or facilitating experiences conducive to these outcomes. In addition, where students' expectations were met (or exceeded), or they were supported to manage inaccurate expectations, they felt more satisfied with their experience, and vice versa. Online student outcomes were also interconnected, with retention informed by students' academic performance and satisfaction; satisfaction informed by learning and academic performance; and academic performance informed by students' learning. A quality OSE, therefore, appears highly complex, dependent on a range of experiences connected to both the learner and their institution. This interconnectedness of the OSE was summarised through a *MAC-ICE* thematic matrix.

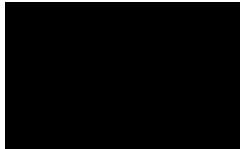
The findings bring together a fragmented and piecemeal understanding of OE, presenting a holistic and student-centred depiction of a quality OSE. The present research combines and builds upon Constructivist Learning Theory (Lesgold, 2004; Richardson, 2003), Expectation-Confirmation Theory (Bhattacharjee, 2001), and Kember's Longitudinal-process Model of Drop-out from Distance Education (1989), to form a holistic and student-centred understanding of the OSE, enabling propositions that may clarify and enhance OE theory, and contribute to improved online student outcomes. The resultant *MAC-ICE* thematic structure and matrix, furthermore, offer means through which prior research may be further scrutinised, and the OSE thoroughly examined, enabling researchers, policy-makers and universities alike, to identify, investigate and implement strategies that may ensure a quality OSE.

## **Copyright and Access Declaration**

I certify that this thesis does not, to the best of my knowledge and belief:

- (i) incorporate without acknowledgement any material previously submitted for a degree or diploma in any institution of higher education;
- (ii) contain any material previously published or written by another person except where due reference is made in the text; or
- (iii) contain any defamatory material.

Signed:



Date: 9 March 2018

## **Acknowledgements and Reflective Statement**

This hasn't been an easy journey. Studying part-time, while I continued to grow my career, it has taken years of dedication, commitment and persistence. But I got there, and I am better for it. The journey has been more than its destination. Completing my PhD has taught me I am capable of anything I put my mind to. When I am ready to give up, just taking things one step at a time can make all the difference – it's never as bad as it seems, and tomorrow I'll wonder what all the fuss was about. While I may get much of my inspiration from those around me, I have learned that I have the conviction within myself to push through immense challenges, even when I feel I shouldn't have to. I have also discovered a love of qualitative research, writing, and a deep desire to share knowledge for a better world.

My reasons for attempting this PhD were not motivated by a job or career. I chose to embark on this journey specifically to challenge myself. I wanted to see what I was capable of. If I could do this, I could do anything! Now standing at the cusp of completion, I look back and see my success. I have discovered I can do something many cannot. Something that wasn't easy, that challenged not only my intellect, but tested my resilience and self-efficacy. Through all the exhaustion and hard work, I am so proud of what I have achieved, and immensely excited to share what I have learned with the world.

I didn't get here on my own, though. My family, friends and colleagues have been instrumental throughout this journey. I would like to personally acknowledge the integral support from my managers, colleagues and mentors, with particular thanks to Amanda Willis, Sue Jones, Helen Docherty, Liz Halsmith, Dallas Magann and Miguel Gil, who each enabled me to focus on study when work seemed much more important, and gave me the confidence to keep going; and thank everyone who welcomed a conversation about the Online Student Experience.

The wisdom and support of my study supervisors, initially Lynne Cohen and Terry de Jong, and later Julie Ann Pooley and Maryam Omari, have been invaluable. These amazing people have provided me with priceless encouragement and direction, without which I would never have believed this could be done. Thank you



for listening to my ideas, reading my drafts, challenging me to do more, and for guiding me with such care and respect.

I also want to thank my friends and family, who continually enquired about my progress, and listened to endless explanations that often made no sense to them. Most importantly, my wonderful husband, Chris, has been my absolute rock, a pillar of strength who brought me down to earth, calmed me and reminded me what it's all for. His support, always without question or complaint, has been so crucial to my progress. I would not be here without you!

I could not finish this thesis without acknowledging one other incredible support. From a young age, my father taught me to challenge myself, to go that step further, and to do so for the betterment of others. His belief in me, and his deep commitment to the greater good, has been a fundamental driver of my education, and my career. Though it devastates me he is not here to share in my success, and will never read this thesis, I know he would be immensely proud.

In loving memory, I dedicate this thesis to my dad.

## Table of Contents

Use of Thesis.....	ii
Abstract .....	iii
Copyright and Access Declaration .....	v
Acknowledgements and Reflective Statement .....	vi
Table of Contents .....	viii
List of Figures .....	xvi
List of Tables.....	xx
Research Output .....	xxi
Glossary and Abbreviations .....	xxii
Abbreviations.....	xxiv
<b>CHAPTER 1: Introduction .....</b>	<b>1</b>
Online education in Australia .....	2
A holistic understanding of the Online Student Experience .....	4
<i>Quality in online education .....</i>	<i>6</i>
<i>Defining online education .....</i>	<i>6</i>
<i>The online student perspective.....</i>	<i>7</i>
<i>The online first-year experience .....</i>	<i>8</i>
The present research.....	9
Overview of the thesis.....	12
<b>CHAPTER 2: The Empirical and Theoretical Research Context .....</b>	<b>15</b>
The growth of online education .....	15
The Student Experience .....	18

<i>Quality and the Student Experience</i> .....	19
The Online Student Experience .....	20
Quality in online education .....	22
<i>The benefits and limitations to online education</i> .....	22
<i>Contested online student outcomes</i> .....	24
A theoretical framework for quality online education .....	28
<i>Learning and academic performance</i> .....	28
<i>Student satisfaction</i> .....	36
<i>Student retention</i> .....	40
Confounding factors and gaps in prior research .....	47
<i>Online versus on-campus Student Experiences</i> .....	47
<i>Differences between Online Student Experiences</i> .....	57
<i>Student expectations of online education</i> .....	59
The total Online Student Experience .....	62
<i>Accommodating student expectations</i> .....	64
<i>Beyond the academic experience</i> .....	64
<i>The missing student perspective</i> .....	65
<i>The online first-year experience</i> .....	65
The present research.....	66
<b>CHAPTER 3: Research Methodology</b> .....	<b>70</b>
Research aim and questions.....	70

Methodology.....	71
<i>Philosophical underpinnings</i> .....	71
<i>Qualitative inquiry</i> .....	73
<i>Phenomenology</i> .....	75
<i>Case study research</i> .....	78
Research methods .....	80
<i>The case and research participants</i> .....	80
<i>Variables</i> .....	86
<i>Data collection</i> .....	89
<i>Data analysis</i> .....	96
Research quality and other ethical considerations .....	101
<i>Scientific rigor in qualitative research</i> .....	101
<i>Limitations of case study research</i> .....	105
<i>Scope of interpretation</i> .....	106
<i>Ethical considerations</i> .....	109
Summary of research methodology .....	110
<b>CHAPTER 4: The Lived Experience of Online Education – Part I (The</b>	
<b>Learner) .....</b>	<b>111</b>
Describing the lived experience.....	112
An emerging structure of online education .....	113
Motivation .....	117
<i>Concentration</i> .....	118

<i>Commitment</i> .....	124
<i>Self-efficacy</i> .....	129
<i>Interest and passion</i> .....	133
<i>Rewards</i> .....	136
<i>Motivation and the Online Student Experience</i> .....	139
Ability .....	142
<i>Academic skills</i> .....	143
<i>Computer literacy</i> .....	147
<i>Content knowledge</i> .....	150
<i>Organisation and time management</i> .....	153
<i>Self-regulation</i> .....	159
<i>Ability and the Online Student Experience</i> .....	163
Circumstances.....	166
<i>Simultaneous priorities</i> .....	167
<i>Peripheral support</i> .....	173
<i>Health and wellbeing</i> .....	179
<i>Study environment</i> .....	183
<i>Circumstances and the Online Student Experience</i> .....	186
Summary of learner themes.....	188
<b>CHAPTER 5: The Lived Experience of Online Education – Part II (The Institution)</b> .....	<b>193</b>
Interaction.....	193

<i>Instructor interaction .....</i>	<i>194</i>
<i>Content interaction.....</i>	<i>200</i>
<i>Peer interaction.....</i>	<i>205</i>
<i>Interaction and the Online Student Experience .....</i>	<i>211</i>
Curriculum.....	213
<i>Flexibility.....</i>	<i>214</i>
<i>Challenge.....</i>	<i>218</i>
<i>Relevance.....</i>	<i>222</i>
<i>Curriculum and the Online Student Experience .....</i>	<i>226</i>
Environment .....	229
<i>Online delivery.....</i>	<i>230</i>
<i>Technology.....</i>	<i>235</i>
<i>Environment and the Online Student Experience .....</i>	<i>239</i>
Summary of institution themes .....	240
Connections between online student outcomes .....	244
<i>Learning and academic performance .....</i>	<i>245</i>
<i>Learning and satisfaction .....</i>	<i>245</i>
<i>Academic performance and satisfaction .....</i>	<i>246</i>
<i>Academic performance and retention .....</i>	<i>246</i>
<i>Satisfaction and retention.....</i>	<i>246</i>
<i>Summary of connections between online student outcomes .....</i>	<i>247</i>

A thematic structure of the total Online Student Experience .....	248
<i>A MAC-ICE structure of learning</i> .....	250
<i>A MAC-ICE structure of academic performance</i> .....	251
<i>A MAC-ICE structure of student satisfaction</i> .....	252
<i>A MAC-ICE structure of retention</i> .....	253
<i>A MAC-ICE thematic matrix for a quality Online Student Experience</i> ....	254
Summary of findings.....	256
<b>CHAPTER 6: Interpretation and Implications of the Research Findings.....</b>	<b>258</b>
A MAC-ICE thematic structure of the Online Student Experience.....	258
<i>Research Question 1: What is the lived experience of OE, in the context of the first year of study at an Australian public university?</i> .....	258
<i>Research Question 2: what are students' expectations of OE, and how do these expectations inform students' construction of, and attribution of meaning to their lived experiences of OE?</i> .....	260
<i>Research Question 3: how do students' lived experiences of OE inform the perceived quality of their OSE, with regard to their learning, academic performance, satisfaction and retention outcomes, during their first year of study?</i> .....	262
<i>Conceptualising a quality Online Student Experience</i> .....	263
Implications for theory .....	264
<i>Online students' learning and academic performance</i> .....	264
<i>Online student satisfaction</i> .....	271
<i>Online student retention</i> .....	277

<i>Theoretical conceptualisation of the Online Student Experience</i> .....	282
Practical implications for online education .....	285
<i>Improving online student learning</i> .....	285
<i>Improving online student academic performance</i> .....	291
<i>Improving online student satisfaction</i> .....	301
<i>Improving online student retention</i> .....	311
<i>Enhancing the total Online Student Experience</i> .....	319
Chapter summary .....	323
<b>CHAPTER 7: Summary and Conclusion</b> .....	<b>326</b>
Students' lived experiences of online education .....	326
A quality Online Student Experience.....	328
The importance of students' expectations .....	330
Implications for theory .....	331
<i>An empirical evidence base</i> .....	331
<i>Differentiating online and on-campus Student Experiences</i> .....	332
<i>Online student learning and academic performance</i> .....	333
<i>Online student satisfaction</i> .....	335
<i>Online student retention</i> .....	336
<i>The total Online Student Experience</i> .....	338
Implications for practice.....	340
<i>Online education policy</i> .....	340



<i>Enhancing the Online Student Experience .....</i>	<i>344</i>
Methodological considerations, and opportunities for further research.....	350
Concluding comments.....	353
<b>References .....</b>	<b>355</b>
<b>Appendix A: The Case University .....</b>	<b>374</b>
<b>Appendix B: Participant Recruitment Materials .....</b>	<b>375</b>
<b>Appendix C: Participant Consent Form .....</b>	<b>376</b>
<b>Appendix D: Example Interview Invitations and Confirmation Emails .....</b>	<b>378</b>
<b>Appendix E: Interview Schedules .....</b>	<b>379</b>

## List of Figures

<i>Figure 1.</i> The effects of expectations on satisfaction and continuance intentions, according to ECT, incorporating post-usage expectations, based on the extended Expectation-Confirmation Model developed by Bhattacharjee (2001).....	38
<i>Figure 2.</i> Tinto's Model for Student Dropout in HE (1975, Figure 1). ....	44
<i>Figure 3.</i> Kember's Longitudinal-process Model of Drop-out from Distance Education (1989, Figure 3). ....	45
<i>Figure 4.</i> Scheduling of Time 1, 2 and 3 interviews across three participant cohorts (5 interview stages over two years). ....	85
<i>Figure 5.</i> The data collection and analysis procedures used in the present research, adapted from Glesne and Peshkin (1992), Karlsson (1993), and Braun and Clarke (2006). ....	98
<i>Figure 6.</i> Identified learner ( <i>MAC</i> ) and institutional ( <i>ICE</i> ) themes and sub-themes, which together form a <i>MAC-ICE</i> thematic structure of the OSE.....	116
<i>Figure 7.</i> The <i>Motivation</i> theme, incorporating sub-themes of <i>concentration</i> , <i>commitment</i> , <i>self-efficacy</i> , <i>interest and passion</i> , and <i>rewards</i> .....	117
<i>Figure 8.</i> The perceived connections between <i>concentration</i> , other <i>MAC-ICE</i> themes (left), and online student outcomes (right).....	124
<i>Figure 9.</i> The perceived connections between <i>commitment</i> , other <i>MAC-ICE</i> themes (left), and online student outcomes (right).....	129
<i>Figure 10.</i> The perceived connections between <i>self-efficacy</i> , other <i>MAC-ICE</i> themes (left), and online student outcomes (right).....	132
<i>Figure 11.</i> The perceived connections between <i>interest and passion</i> , other <i>MAC-ICE</i> themes (left), and online student outcomes (right).....	136

<i>Figure 12. The perceived connection between rewards and online student outcomes (right).</i> .....	139
<i>Figure 13. The perceived connections between the Motivation theme; other MAC-ICE themes (left); and online student outcomes (right).</i> .....	141
<i>Figure 14. The Ability theme, incorporating sub-themes of academic skills, computer literacy, content knowledge, organisation and time management, and self-regulation.</i> .....	142
<i>Figure 15. The perceived connections between academic skills, other MAC-ICE themes (left), and online student outcomes (right).</i> .....	147
<i>Figure 16. The perceived connection between computer literacy and other MAC-ICE themes (left).</i> .....	150
<i>Figure 17. The perceived connection between content knowledge and online student outcomes (right).</i> .....	152
<i>Figure 18. The perceived connections between organisation and time management, other MAC-ICE themes, and online student outcomes.</i> .....	158
<i>Figure 19. The perceived connection between self-regulation and other MAC-ICE themes (left).</i> .....	163
<i>Figure 20. The perceived connections between the Ability theme; other MAC-ICE themes (left); and online student outcomes (right).</i> .....	165
<i>Figure 21. The Circumstances theme, incorporating sub-themes of simultaneous priorities, peripheral support, health and wellbeing, and study environment.</i> .....	167
<i>Figure 22. The perceived connections between simultaneous priorities, other MAC-ICE themes (left), and online student outcomes (right).</i> .....	173
<i>Figure 23. The perceived connection between peripheral support and other MAC-ICE themes (left).</i> .....	179

<i>Figure 24. The perceived connections between health and wellbeing, other MAC-ICE themes (left), and online student outcomes (right).....</i>	183
<i>Figure 25. The perceived connection between study environment and other MAC-ICE themes (left). ....</i>	186
<i>Figure 26. The perceived connections between Circumstances; other MAC-ICE themes (left); and online student outcomes (right).....</i>	188
<i>Figure 27. The thematic structure for students' learner-related lived experiences of OE, incorporating Motivation, Ability and Circumstances (MAC) themes and sub-themes. ....</i>	189
<i>Figure 28. The Interaction theme, incorporating sub-themes of instructor, content and peer interaction.....</i>	194
<i>Figure 29. The perceived connections between instructor interaction, other MAC-ICE themes (left), and online student outcomes (right).....</i>	200
<i>Figure 30. The perceived connection between content interaction and online student outcomes (right). ....</i>	204
<i>Figure 31. The perceived connections between peer interaction, other MAC-ICE themes (left), and online student outcomes (right).....</i>	210
<i>Figure 32. The perceived connections between Interaction; other MAC-ICE themes (left); and online student outcomes (right). ....</i>	212
<i>Figure 33. The Curriculum theme, incorporating sub-themes of flexibility, challenge, and relevance. ....</i>	214
<i>Figure 34. The perceived connections between flexibility, other MAC-ICE themes (left), and online student outcomes (right).....</i>	217
<i>Figure 35. The perceived connections between challenge, other MAC-ICE themes (left), and online student outcomes (right).....</i>	222

<i>Figure 36. The perceived connections between <i>relevance</i>, other <i>MAC-ICE</i> themes (left), and online student outcomes (right).....</i>	226
<i>Figure 37. The perceived connections between <i>Curriculum</i>; other <i>MAC-ICE</i> themes (left); and online student outcomes (right). ....</i>	228
<i>Figure 38. The <i>Environment</i> theme, incorporating sub-themes of <i>online delivery</i> and <i>technology</i>.....</i>	230
<i>Figure 39. The perceived connections between <i>online delivery</i>, other <i>MAC-ICE</i> themes (left), and online student outcomes (right).....</i>	235
<i>Figure 40. The perceived connection between <i>technology</i> and other <i>MAC-ICE</i> themes (left). ....</i>	239
<i>Figure 41. The perceived connections between <i>Environment</i>; other <i>MAC-ICE</i> themes (left); and online student outcomes (right). ....</i>	240
<i>Figure 42. The thematic structure for students' institution-related lived experiences of OE, incorporating <i>Interaction</i>, <i>Curriculum</i> and <i>Environment (ICE)</i> themes and sub-themes. ....</i>	242
<i>Figure 43. The <i>MAC-ICE</i> thematic structure of the OSE; incorporating learner <i>Motivation</i>, <i>Ability</i> and <i>Circumstances</i>, combined with institutional <i>Interaction</i>, <i>Curriculum</i> and <i>Environment</i>.....</i>	249
<i>Figure 44. The <i>MAC-ICE</i> thematic structure of the OSE, incorporating learner <i>Motivation</i>, <i>Ability</i> and <i>Circumstances</i>, alongside institutional <i>Interaction</i>, <i>Curriculum</i> and <i>Environment</i>.....</i>	259
<i>Figure 45. ECT applied to OE, incorporating expectation management through <i>peripheral support</i> and <i>instructor interaction</i>; based on the Expectation-Confirmation Model developed by Bhattacharjee (2001). ....</i>	276
<i>Figure 46. Kember's Longitudinal-process Model of Drop-out from Distance Education (1989, Figure 3). ....</i>	280

## List of Tables

<i>Table 1:</i> Participant Demographics .....	83
<i>Table 2:</i> Participant Enrolment .....	84
<i>Table 3:</i> Identified Learner ( <i>MAC</i> ) and Institutional ( <i>ICE</i> ) Themes .....	115
<i>Table 4:</i> Perceived Connections between Learner ( <i>MAC</i> ) Themes, other <i>MAC-ICE</i> Themes, and Online Student Outcomes .....	191
<i>Table 5:</i> Perceived Connections between Institutional ( <i>ICE</i> ) Themes, other <i>MAC-ICE</i> Themes, and Online Student Outcomes .....	243
<i>Table 6:</i> The <i>MAC-ICE</i> Thematic Matrix of Perceived Contributions to a Quality Online Student Experience .....	255

## Research Output

- Henry, M., Pooley, J. & Omari, M. (2016, September). *The Role of Student Support in the Online Student Experience*. Paper presented at the Western Australia 2016 ANZSSA/ISANA Conference, Fraser Suites, Perth.
- Henry, M., Pooley, J. & Omari, M. (2016, February). *Effective Online Learning from the Student Perspective: A Journey behind the Screens*. Paper presented at the Transforming the Teaching and Learning Environment 2016 Virtual Conference, Pennsylvania's State System of Higher Education.
- Henry, M. (2015, October). *Effective Online Learning from the Student Perspective: A Journey behind the Screens*. Paper presented at the 21st Annual Online Learning Consortium International Conference, Orlando, Florida.
- Henry, M., Pooley, J. A., & Omari, M. (2014, January). *Student motivations for studying online: A qualitative study*. Paper presented at the Transformative, innovative and engaging. Proceedings of the 23rd Annual Teaching Learning Forum.

## Glossary and Abbreviations

The following definitions are applied throughout this thesis, adopting terminology of the case University, which is consistent with the wider Australian Higher Education sector. It is acknowledged this terminology may differ from that used overseas.

<b>Adobe Connect</b>	Web conferencing software, which offers online meeting and collaboration spaces. Some online interviews were conducted in this system.
<b>Blackboard</b>	The case University's Learning Management System, through which learning materials are delivered, instructors and students communicate and assessments are submitted, electronically. Some online interviews were conducted in this system.
<b>Course</b>	A program of study necessary to qualify for a higher education award. In the context of the present research, such awards include undergraduate <i>Bachelor Degree</i> , <i>Graduate Certificate</i> or <i>Graduate Diploma</i> qualification, completed at the case University.
<b>First-Year Experience</b>	The experiences of university students in their first year of study. That is, students' first and second semesters (or equivalent), of a course (irrespective of previous higher education experience).
<b>Online Student Outcomes</b>	Participants' perceived and self-reported: <i>learning</i> - depth of knowledge acquired through their online course; <i>academic performance</i> - achievement of desired grades for assessment units; <i>satisfaction</i> - enjoyment, pride and perceived value of the OSE; and <i>retention</i> - desire and intention to persist with the



online course to completion, including completion of associated units; following one semester, and one year of online learning. With the focus of the present research on the *student* experience, official results (determined and reported by instructors) were not considered, though this may be a valuable component to explore in future research.

<b>On-Campus Education</b>	Study in a university course that requires/expects students to attend scheduled classes on a university campus.
<b>Online Education (OE)</b>	Study in a university course, which requires students to interact with instructors and course materials via the internet, with <u>no</u> expectation of attending a university campus.
<b>Study load</b>	The number of <i>units</i> or <i>credit points</i> undertaken concurrently, classified as <i>full-</i> or <i>part-time</i> study. A <i>full-time</i> load normally involves four units, or 45-60 credit points per semester, and is considered equivalent to a full-time job (i.e. approximately 40 hours per week). A <i>part-time</i> load is any load less than full-time.
<b>The (Online) Student Experience (OSE)</b>	The overall experience associated with being a (online) university student, incorporating experiences of learning, as well as a lifestyle, external pressures, wellbeing and access to support.
<b>Unit</b>	Individual components, or subjects, which make up a <i>course</i> . One unit usually equates to 15 credit points, though can vary between 10 and 60 credit points, depending on the complexity and time-commitment required for the unit.

## **Abbreviations**

**CLT:** Constructivist Learning Theory

**ECT:** Expectation-Confirmation Theory

**HE:** Higher Education

**LMS:** Learning Management System

**OE:** Online Education

**OSE:** Online Student Experience

## CHAPTER 1: Introduction

*On-line study shouldn't be something that students do because they can't be on campus. It should be a choice students make because they see it as just as good. Tertiary institutions need to really put some fresh thought into it. (Research participant Lisa, second semester)*

The recent explosion of technological advances has revealed endless opportunities for connection and innovation across the globe. Time zones and availability no longer limit the way in which one lives, works, learns and connects with others. Eighty-six per cent of Australian households now regularly access the internet for their banking, social networks, goods and services, entertainment, and education (Australian Bureau of Statistics, 2016). Restricted solely by the speed of an internet connection, the world is far more connected and accessible today, than it has ever been. This enhanced access has facilitated greater opportunities, choice and competition.

Online education (OE), in which students interact with instructors and course materials via the internet and are not required to attend a university campus, poses one such opportunity. With its roots in distance education, OE offers students anywhere in the world opportunities to access information, and connect with like-minded and experienced individuals, to extend their knowledge. The internet and email have offered students and institutions a new way to access, communicate and share information, which may once have taken weeks via post. The opportunities provided by OE, furthermore, have continued to evolve as new technologies are developed, promising further improvements, efficiencies and innovative ways to learn and teach.

With time and place no longer limiting who can study at a given institution, universities have embraced the opportunity to diversify student bodies and improve learning environments. Through enhanced connection to prospective students, universities can recruit students from all over the world, and from communities closer to home that may not have previously accessed higher education (HE). HE is now a feasible opportunity for people in regional and remote areas, as well as those

with complex needs, such as people with disability or caring responsibilities, or those working while studying (Universities Australia, 2013). The capacity to cater to a more diverse student body has been further strengthened through innovations in learning technology, enabling universities to engage with students in fundamentally new and innovative ways. A more diverse student body has subsequently facilitated opportunities for a richer Student Experience that more accurately reflects the global community in which graduates live and work.

### **Online education in Australia**

OE has grown dramatically over recent years. Within Australia, external HE commencements, most of which are fully online, increased 55 per cent between 2009 and 2015 (Australian Government, 2010, 2015). In 2015, 213,588 students, including 92,916 new students, participated in online courses, constituting almost one in six new HE enrolments (Australian Government, 2015). The growth of OE, furthermore, has overtaken overall increases in university enrolments, suggesting students are increasingly considering OE their preferred means to complete qualifications (Australian Government, 2010, 2015).

Political and economic imperatives have helped spur this growth in OE. In 2008, a need to widen participation was identified through an Australian HE review (Bradley, Noonan, Nugent, & Scales, 2008). In response to this review, the Australian Government removed limits on the number of undergraduate places that were federally subsidised; and called upon universities to diversify and increase their enrolments, particularly of students from low socioeconomic status backgrounds, regional and remote areas, Indigenous Australians, and adults aged 25 to 34 (Universities Australia, 2013). The removal of enrolment caps enabled universities to increase their intake; and afforded freedom to experiment with innovative delivery models (Norton, Sonnemann, & McGannon, 2013).

Subsequent expansion amidst declining revenue from international student enrolments, tightened government investment, and the global financial crisis, however, placed increasing economic pressure on universities (Universities Australia, 2013). Universities needed to diversify and increase student enrolments to

meet government targets, and continue satisfying industry demand, yet needed to achieve this within a tight fiscal environment. The application of technology, and OE, offered a valuable opportunity to meet this challenge. OE would enable universities to reach a more diverse and wide-spread student body, while facilitating administrative efficiencies and minimising expenditure on brick-and-mortar resources (Universities Australia, 2013).

With increasing pressure on government investment in HE, and attempts to widen participation resulting in dramatic increases in university enrolments; questions were raised about the quality and standards of a demand-driven HE system (Krause, 2012; Universities Australia, 2013). Pressure intensified for universities to prove the quality and value of their courses, including those delivered online, or risk their accreditation and crucial funding. This quality agenda saw an increased focus on student outcomes, particularly in relation to student success, retention, completion and satisfaction (Universities Australia, 2013). Universities were now required to meet threshold standards for the design and delivery of courses, report annually on completions, and conduct regular benchmarking to ensure appropriate standards of assessment and satisfaction were met (Australian Government, 2011; Universities Australia, 2013). Course learning outcomes and graduate attributes needed to be clearly articulated and guide teaching and learning activity, becoming indicators of graduate and course quality (Universities Australia, 2014). Sector-wide surveys, such as the Student Experience Survey of current students, and the Course Experience Questionnaire for graduates, were also commissioned by the Australian Government to evaluate and compare institutional quality; with results driving commonwealth investment, improvements in teaching and learning, institutional planning, and student choice (Social Research Centre, 2017a). It is not enough simply to attract a diverse range of online students, universities must now also demonstrate their students are retained and shown to acquire valuable knowledge and experience through the completion of their qualifications.

Student satisfaction and retention represent not simply a political obligation, but an important commercial imperative for universities. Student attrition can cost universities \$36 million annually in lost revenue and recruitment costs, and \$1.3 billion nationally (Adams, Banks, Davis, & Dickson, 2010). Attrition and

dissatisfaction, particularly in the context of globally-accessible communication, can also be highly damaging to institutional reputation; affecting prospective enrolments, rankings and research income (Jones, 2008). Students are equally concerned with the costs of their education, seeking assurance their experiences will benefit their career in meaningful ways, justifying investment of time and money (Universities Australia, 2014).

The explosion of worldwide connectivity, facilitated by technological advancements and the digital economy, has created a global HE market. OE offerings have increased worldwide, with Asia and the United States of America (USA) leading the way (Allen, Seaman, Poulin, & Taylor Straut, 2016; Docebo, 2014). Universities now compete, not only to attract international students, but also to entice *local* students, who can genuinely choose between their closest institution and some of the biggest names in HE (Universities Australia, 2013). Prestigious institutions across the globe are actively extending their programs online, all competing simultaneously for Australian students.

With increased student choice in a global HE market, reputation, quality and value for money are more critical to an institution's survival, than ever before. Understanding if and how students' expectations are met, and what makes them perceive their experience as effective and valuable, is vital to ensuring universities provide education that meets students' needs, and justifies investment of public and private funding. Students' expectations and perspectives of OE, along with the potential influence of expectations and experiences on online student outcomes, however, remain under-researched. Existing measures of quality in OE, furthermore, continue to focus on the institution and its teaching (Social Research Centre, 2017a), neglecting a more holistic understanding of the Online Student Experience (OSE).

### **A holistic understanding of the Online Student Experience**

The HE climate is continually evolving, under constant scrutiny from politicians, investors, prospective employers, students and the wider community. The need to ensure quality programs are delivered, all stakeholders are satisfied, and the financial viability of institutions is sustained, has impelled substantial research into

HE quality. With students increasingly viewed as paying customers (Khawaja & Dempsey, 2008; Krause, 2005), furthermore, the total ‘Student Experience’ (Harvey, Burrows & Green, 1992, cited in Benckendorff, Ruhanen, & Scott, 2009) has become a central focus for universities (Universities Australia, 2014). This *Student Experience* perspective has extended the traditional focus on academic aspects of teaching, learning and curricula; to incorporate student lifestyles, extracurricular activities, academic advice, support, and work experience (Purdue University, 2004, cited in Benckendorff et al., 2009). Universities have recognised that well-supported and well-engaged students achieve the best academic outcomes, and have subsequently invested in strategies to ensure student safety and wellbeing, as pre-conditions for a successful Student Experience (Universities Australia, 2014).

In contrast, OE research and practice to date have failed to move beyond students’ engagement with learning and teaching, to consider the broader experiences of online students. The literature has focused instead on measuring particular online student outcomes in comparison to on-campus outcomes (e.g., Driscoll, Jicha, Hunt, Tichavsky, & Thompson, 2012; Parsons-Pollard, Lacks, & Grant, 2008; Xu & Jaggars, 2014); identifying potential influences on specific outcomes (e.g., Calli, Balcikanli, Calli, Cebeci, & Seymen, 2013; Hyllegard, Deng, & Hunter, 2008); or the development of best-practice strategies to maximise particular outcomes (e.g., Haas, 2015; Rekkedal, 2011). Few studies have examined the broader experience of *being* an online student. Assumptions for potential determinants and measures of quality are seemingly extrapolated from understanding of the on-campus Student Experience and research aimed at improving performance against these measures of quality (e.g., Cavanaugh & Jacquemin, 2015; DiRienzo & Lilly, 2014; Driscoll et al., 2012), rather than understanding what may facilitate a quality OSE. More recently, the conversation has turned to open education, or Massive Open Online Courses (MOOCs), which offer free, open-access OE; along with the application of particular teaching approaches, innovative technology and online tools (Ernst & Young, 2012; Norton et al., 2013). Concerns continue to be raised, nonetheless, about OE quality, with low retention, satisfaction and academic outcomes frequently cited in reference to OE (Allen et al., 2016). Questions persist about whether OE is a viable HE strategy, and how associated quality may be

ensured. Prior research has offered suggestions to answer these questions, yet substantial gaps remain in current understanding of the OSE.

### **Quality in online education**

Conflicting and incomplete literature has created uncertainty about OE quality, and how to maximise online student outcomes. Some studies suggest online students can fare better than students in traditional on-campus courses, and the process can be quite valuable for all involved (e.g., Driscoll et al., 2012; van Schaik, Barker, & Beckstrand, 2003). Others, report the opposite: higher attrition, lower grades and lower student satisfaction in online courses (e.g., Hyllegard et al., 2008; Palmer & Holt, 2009; Xu & Jaggars, 2014). Previous research has often ignored some fundamental differences between the online and on-campus Student Experience, however, assuming where course content is identical, online and on-campus experiences must be comparable (e.g., Parsons-Pollard et al., 2008; Tanner, Noser, & Totaro, 2009). An appreciation of how the OSE may differ from on-campus experiences, and the role of particular experiences in facilitating stronger outcomes, therefore, may help to clarify OE quality, and highlight factors that may have confounded conflicting studies.

### **Defining online education**

OE theory is shrouded in ambiguity. Descriptions of OE vary considerably in the literature; and the distinction between online and on-campus education is often blurred. Tsai and Machado (2002) define OE in terms of content being readily accessible on a computer, though not necessarily delivered over the internet. Allen et al. (2016) similarly define an online course as one that delivers at least 80 per cent of content online. A range of terms have been used interchangeably in reference to OE, with subtle differences in their underlying meaning (Moore, Dickson-Deane, & Galyen, 2011). Terms include e-learning (e.g., Chang, Liang, Shu, & Chiu, 2015; Law, Lee, & Yu, 2010), distance learning (e.g., Allen et al., 2004; Hyllegard et al., 2008), blended learning (e.g., Bolliger & Erichsen, 2013; Schober, Wagner, Reimann, Atria, & Spiel, 2006), web-based learning (e.g., Antonis, Daradoumis, Papadakis, & Simos, 2011; Chiu, Sun, Sun, & Ju, 2007; Wang, 2009), open learning



(e.g., Clarebout & Elen, 2008), technology-enhanced learning (e.g., Vogel, 2010), internet-based instruction (e.g., Piotrowski & Vodanovich, 2000), and MOOCs (e.g., Allen et al., 2016; Docebo, 2014; Moore et al., 2011). Such terms have also been used to describe a wide range of activities: from simply accessing information and watching online self-help videos (e.g., Kramer & Bohrs, 2016); to self-paced short courses (e.g., Chang et al., 2015); to online activities, within otherwise on-campus programs (e.g., Law et al., 2010; Wynegar & Fenster, 2009); to fully online university degrees (e.g., Hyllegard et al., 2008; O'Shea, Stone, & Delahunty, 2015). Within on-campus courses, furthermore, today's university students are frequently expected to access some learning activities, research information and submit assessments, electronically (Norton et al., 2013). Fully online courses also exist, which take the application of learning technology one step further, removing the need for any face-to-face contact. Entire awards can now be completed online, without ever visiting a campus or speaking face-to-face with another student or instructor. The extent to which participation in a course involves and relies on technology, therefore, can sit anywhere from depending primarily on print-based and/or face-to-face participation, to blended learning involving both online and face-to-face components, to entirely online delivery with no face-to-face participation at all.

In the absence of a universally accepted definition or model of OE, it is difficult to make conclusive judgements about quality for this mode of education (Moore et al., 2011). A diversity of perspectives on what classifies as OE has resulted in a wide assortment of case studies claiming particular factors to be critical, with no clear understanding of how these findings might apply to other variations of OE. Recognising this potential for confusion, the present research conceptualises the term 'Online Education' (OE) as representing *university courses that require students to interact with instructors and course materials via the internet, with no expectation of attending a university campus.*

### **The online student perspective**

Regardless of diverse interpretations of OE, the student perspective is notably limited in the OE literature. Few studies to date have comprehensively investigated

students' expectations and perspectives of OE, nor the potential influence of those expectations and subsequent experiences on online student outcomes. Universities may postulate reasons students might seek OE, and target such motivations in promoting online courses (e.g., Athabasca University, 2016; Charles Sturt University, 2016; Case University, 2016). The sector has failed, however, to contribute empirical evidence of student expectations for their OSE. This prevents judgement of whether or not such expectations are met. Likewise, evaluation studies have tended to focus on online student outcomes in reference to researchers' (typically instructors themselves) predetermined measures of success (e.g., Brinkworth, McCann, Matthews, & Nordstrom, 2009; Mupinga, Nora, & Yaw, 2006), neglecting and minimising the student perspective. Researchers have also relied primarily on quantitative survey instruments, which limit consideration of the student voice (e.g., Palmer & Holt, 2009; Parsons-Pollard et al., 2008). Furthermore, studies have largely ignored the broader circumstances in which students may engage with OE.

Limited consideration of the online student perspective leaves a notable gap in current understanding. It restricts interpretation of what may make a successful and valuable experience, in the eyes of online students. A greater understanding of what *students* expect of OE, how *they* experience OE, and what *they* attribute to a quality experience, therefore, is essential to enable universities to deliver quality programs that place them as competitive in a global online HE market.

### **The online first-year experience**

With student expectations central to their preparation and transition, the particular challenges faced by first-year online university students also warrant investigation. It is well-recognised that the first-year experience is particularly critical for student retention and success (Adams et al., 2010). The first-year of study embodies a dramatic transition phase from what is expected, to the realities of HE (Brinkworth et al., 2009; Kift & Nelson, 2005). Student persistence and performance is put to the test, while experiencing high levels of anxiety and stress, as they adapt to the demands of university study (Cooke, Bewick, Barkham, Bradley, & Audin, 2006; Krause, 2006; Nelson, Kift, & Clarke, 2008).

The first-year transition may be even more pronounced for students embarking on OE. Many online students come from less traditional university backgrounds, which may present additional challenges in overcoming educational disadvantage and inexperience (Hyllegard et al., 2008; Xu & Jaggars, 2011). In addition to learning what is expected of them as university students, new online students must learn to use and rely on specific technology, and how to manage their studies when technical difficulties arise (Carr, 2000; Nelson, 2008). New online students, furthermore, must develop the skills that will keep them focused, motivated and on-track, in the face of potential distractions and considerable flexibility (Anderson, 2008; Kikuchi, 2006). With empirical understanding of the first-year experience restricted to on-campus perspectives, however, it remains unclear whether online students commence with accurate expectations of what will be involved, and the skills they (students) need to succeed in OE. Thus, one cannot predict how prepared online students may be for this significant transition.

In the absence of a holistic student-centred understanding of the OSE, combined with empirical support for this mode of education, and a common understanding of what constitutes OE, quality becomes a game of trial and error. There may be successful examples of OE, but there are equally poor examples. What works well for one student, furthermore, may not work well for another. Identifying suitable opportunities, therefore, becomes a troublesome and confusing process for prospective online students, and presents substantial risks to institutional funding and reputation. If the HE industry itself cannot demonstrate how it meets students' needs and provides a high quality OSE, it may struggle to empower students to make informed choices about their education, and to maximise student, institutional and public return on investment.

### **The present research**

A deeper understanding of the first-year OSE is critical to demonstrate quality OE, which attracts and retains a diverse range of students in a global HE market. To satisfy stakeholders, universities must ensure their online courses effectively meet (or manage) student expectations and provide experiences that facilitate strong learning, academic performance, satisfaction, and retention

outcomes. Ensuring a quality OSE requires a deep understanding of what makes students persist and evaluate their experience as successful and valuable. To achieve this, it is necessary to examine the expectations online students bring with them, how they subsequently experience their first year in an online course, and how their expectations and experiences might inform subsequent outcomes.

The present research contributes to a growing body of knowledge about OE, offering insight into the lived experiences of online students. It describes how students construct their lived experiences of OE, and attribute meaning to these experiences. Drawing upon learning, consumer satisfaction and student retention theory, the present research explores the lived experiences of online students and the connections between their expectations, experiences and outcomes, in the context of students' first year of study at an Australian public university. Specifically, it brings together and builds upon Constructivist Learning Theory (Lesgold, 2004; Richardson, 2003), Expectation-Confirmation Theory (Bhattacharjee, 2001), and Kember's Longitudinal-process Model of Drop-out from Distance Education (1989), to form a holistic, student-centred understanding of the OSE, enabling propositions that may clarify and enhance OE theory, and contribute to improved online student outcomes.

The primary research question asked:

1. *What is the lived experience of OE, in the context of the first year of study at an Australian public university?*

Supplementing this, two further research questions were investigated:

2. *What are students' expectations of OE; and how do these expectations inform students' construction of, and attribution of meaning to their lived experiences of OE?*
3. *How do students' lived experiences of OE inform the perceived quality of their OSE, with regard to their learning, academic performance, satisfaction and retention outcomes, during their first year of study?*

The present research was conducted, analysed and interpreted within a qualitative phenomenological paradigm, seeking to describe the lived experiences of online first-year students at a case University. Participant perspectives were collected through in-depth online interviews, with resultant transcripts analysed using thematic analysis. Informed by Constructivist Learning Theory (Lesgold, 2004; Richardson, 2003), Expectation-Confirmation Theory (Bhattacharjee, 2001), and Kember's Longitudinal-process Model of Drop-out from Distance Education (1989), the findings offer a rich depiction of first-year university students' lived experiences of OE. Recognising the complexity of the OSE, the findings extend beyond mere description, uncovering potential connections between online students' expectations, experiences and outcomes, which help to explain the OSE phenomenon. Through deep exploration of online students' expectations, experiences and outcomes, across their first year of study at an Australian public university, the resultant thematic structure and matrix of thematic connections offer a comprehensive and detailed depiction of the OSE; which may inform OE, as well as broader HE, theory, policy and practice.

The present research was not intended to advocate for, or determine the effectiveness of OE as an alternative to on-campus education, nor to generalise the OSE. Instead, it offers an in-depth exploration of the OSE in its complexity and entirety, with consideration of the context in which it occurs. It extends current understanding of the OSE through the clarification of previous omissions, misconceptions and assumptions in OE literature. Uniquely, the present research offers a deep, student-centred and holistic understanding of OE, with the OSE explored as an important construct in its own right, beyond its comparison to campus-based education. The findings fill significant gaps in OE research, with regard to qualitative data, investigation of student expectations and perspectives, and the first-year OSE. In addition, the present research introduces comprehensive empirical evidence for the conditions under which online student outcomes may be enhanced.

## **Overview of the thesis**

This thesis consists of seven chapters. The first chapter has set the scene for the present research, to be discussed in this thesis. The research topic was introduced, and an overview of the rationale for investigating student perceptions of their OSE in their first year of study was provided. The concept of OE was discussed in the context of a global HE market, in which institutions must adapt and embrace technological advances to survive. Remaining competitive requires institutions to ensure their OE opportunities are attractive, demonstrate high quality, and meet demand. Knowing what is effective and attractive, however, necessitates a deeper understanding of the OSE than is currently available. Finally, through an explanation of the research aim, the unique contribution to knowledge offered by the present research was introduced.

Further explanation of the empirical research context and theoretical framework is provided in Chapter Two. The chapter offers a critique of existing literature pertaining to online student outcomes, and the role expectations and experiences may play in online HE. Constructivist Learning Theory (Lesgold, 2004; Richardson, 2003), Expectation-Confirmation Theory (Bhattacharjee, 2001), and Kember's Longitudinal-process Model of Drop-out from Distance Education (1989), are introduced and discussed, forming the theoretical framework underpinning conceptualisation of online student outcomes in the present research. Previous research examining online students' learning, academic success, satisfaction and retention is subsequently presented, with associated limitations discussed. The present research, it is argued, is needed to expose the first-year student perspective of OE, and to identify perceived contributions to a quality OSE.

Chapter Three describes the methodology behind the present research. The chapter presents the rationale for adopting qualitative, phenomenological case study methodology, and selecting in-depth online interviews, as efficient and effective research strategies. The strengths of these approaches for the present research, and associated steps to ensure credibility, transferability, dependability and conformability are discussed. The research case is also introduced, and participant

recruitment processes explained. The online interview process is then described in detail, together with data analysis procedures.

Chapters Four and Five present the findings of the present research. Chapter Four describes students' lived experiences of OE, corresponding to the *learner*; with discussion of how students' expectations informed their construction of, and attribution of meaning to their lived experiences; and how students' lived experiences informed the perceived quality of their OSE. Each learner theme is examined in detail, with connections between identified themes and online student outcomes visualised.

Online students' lived experiences of their *institution* are then presented in Chapter Five. As for learner themes in Chapter Four, students' lived experiences of their institution are discussed in the context of corresponding expectations and outcomes. Identified themes are again examined in detail and thematic connections visualised.

Interpretation of the findings is presented in Chapter Six. Online students' expectations, experiences and outcomes, investigated through the present research, are summarised and interpreted in the context of existing literature. The OSE is presented as a thematic structure and matrix, through which other researchers and universities may further investigate the lived experience of OE, and explore opportunities to enhance online student outcomes; subsequently enabling institutions to position online courses as attractive and high quality, in a global HE market. The findings offer researchers, policy makers, university administrators and instructors a deeper understanding of the OSE, which will inform further development of OE theory, policy and practice.

The implications of the present research are summarised in Chapter Seven. The chapter highlights the unique contribution of this research to knowledge, and offers propositions for how the findings may transfer to other institutions, and inform further development of OE theory, policy and practice. Methodological considerations for the interpretation and application of the findings, and recommendations for additional investigation to enhance the OSE are then presented.

Through further research and replication, the OSE described in the present research, may be verified and OE theory clarified, facilitating enhanced OE quality.

The present research will inform the development of theory, policy and practice that may enhance OE quality. Specifically, it presents an in-depth and thorough account of the lived experiences of a group of online students. It highlights the potential importance of particular expectations and/or experiences for online student outcomes, and illuminates components of the OSE that may play an important role in students' learning, academic performance, satisfaction and retention, enabling universities to enhance the quality and value of their online offerings. In addition, the findings offer insights that may be helpful in preparing students for OE. The experiences described in the present research may assist prospective students to form accurate expectations of OE, develop requisite skills, and establish supportive circumstances, which may facilitate a quality OSE. Supplementing this, the application of the present research findings to the design and delivery of online courses, and supportive university infrastructure and policy, may further enhance the OSE, and contribute to improved OE quality.



## **CHAPTER 2: The Empirical and Theoretical Research Context**

The present research sought to describe how first year university students construct their lived experiences of OE, and attribute meaning to these experiences. Prior to discussing the specific research methodology (in Chapter Three), it is helpful to consider the empirical and theoretical context in which the present research is situated. This chapter presents a discussion of the literature pertaining to OE, the role of online students' expectations, and online students' learning, academic performance, satisfaction and retention outcomes. The theoretical basis for conceptualising these online student outcomes is presented, with specific reference to Constructivist Learning Theory (Lesgold, 2004; Richardson, 2003), Expectation-Confirmation Theory (Bhattacharjee, 2001), and Kember's Longitudinal-process Model of Drop-out from Distance Education (1989). In light of conflicting research findings, and with consideration to applicable theory, factors that may contribute to a quality OSE, and which may have confounded previous studies, are subsequently discussed, illuminating the need for the present research, and its unique contribution to knowledge.

### **The growth of online education**

The number of people choosing to learn online has increased significantly over recent years, and has done so at a greater rate than overall HE enrolments. In the USA, online HE enrolments grew from 1.6 million in 2002, to more than 5.8 million in 2014, reflecting a growth of 264 per cent (Allen & Seaman, 2007; Allen et al., 2016). The proportion of students taking at least one unit online increased from one in ten students in 2002, to more than a quarter of all USA HE enrolments in 2014 (Allen & Seaman, 2007; Allen et al., 2016). The perception OE is critical to an institution's long-term strategy has also grown, particularly in the face of economic downturn (Allen & Seaman, 2011; Barber, 2012; McAllister, 2009).

Closer to home, though online enrolments are not specifically recorded, Australian external enrolments, the vast majority of which are now delivered online, have grown 55 per cent since 2009; while overall university enrolments grew only 21 per cent (Australian Government, 2010, 2015). At the case University, external

(online) enrolments grew 69 per cent between 2009 and 2015; increasing from 2,786 students (13% of enrolments) in 2009, to 4,702 students (17% of enrolments) in 2015 (Case University, 2009, 2015b). This dramatic growth in online enrolments signifies that while more people are seeking HE, an increasing proportion of students in Australia, and internationally, are choosing to enrol online, rather than pursue traditional on-campus education.

This growth in OE has been stimulated by political and economic imperatives to increase and widen participation, within a globalised and competitive HE market. With calls for universities to diversify their student body, reinforced by financial and political incentives, OE presents an opportunity to accommodate students who may not otherwise access HE, such as those living remotely or unable to attend classes at particular times (Universities Australia, 2013). OE also offers potential efficiencies and cost savings, with content able to be used and accessed repeatedly, without recurring reliance on instructors' time, and reduced dependence on physical infrastructure (Oliver, 2005). Students have equally embraced opportunities for OE, seeking the flexibility and convenience of technology-enabled participation (Henry, Pooley, & Omari, 2014; Ilgaz & Gulbahar, 2015). In addressing these imperatives, and amidst growing student demand, universities have taken advantage of technological innovations to move more courses online (Oliver, 2005; Universities Australia, 2013).

These political and economic imperatives have also spurred notable shifts in how universities provide education. Ernst & Young (2012) identify five key trends affecting universities: democratisation of knowledge and access; contestability of markets and funding; digital technologies; global mobility; and integration with industry. In response to these trends, new business models have emerged, unbundling, automating, removing or outsourcing components of the traditional HE value chain (such as content development or assessment), in efforts to facilitate efficiencies and reach new markets (Ernst & Young, 2012; Norton et al., 2013). The rise of the MOOC in 2012 is one such example (Norton et al., 2013). Technological developments have also offered greater flexibility, enabling learning to extend well

beyond the classroom, with almost all university students now using technology for some aspect of their studies (Ernst & Young, 2012; Institute for Teaching and Learning Innovation, 2015; Norton et al., 2013). Technology has also facilitated greater access to data on learning behaviour, giving rise to learning analytics and data mining strategies, which seek to identify patterns and triggers for students at risk (Norton et al., 2013). New players, such as global technology companies and accrediting bodies, are also beginning to enter the HE market, bringing with them innovative approaches to education, and in some cases, open access; presenting notable advantages for mature aged, busy and career-motivated students (Ernst & Young, 2012; Institute for Teaching and Learning Innovation, 2015; Norton et al., 2013). In addition, student needs are changing, with more mature and employment-focused students accessing university; and graduate employment requiring more transferable skills, and the ability to apply knowledge creatively (Institute for Teaching and Learning Innovation, 2015).

With these innovative opportunities and changing student needs, universities have been forced to reconsider how they may have operated and taught for centuries. The traditional lecturer-as-expert, student-as-knowledge recipient approach may apply poorly to the modern world, requiring a shift towards student-centred teaching and knowledge co-creation (Ernst & Young, 2012; Institute for Teaching and Learning Innovation, 2015). HE has virtually been turned on its head, with ‘flipped classrooms’ now swapping traditional lecture plus homework models, for recorded lectures as homework and class-time dedicated to exploration and discussion of content (Institute for Teaching and Learning Innovation, 2015; Norton et al., 2013). This evolution of innovative approaches has created further competition for traditional universities (Ernst & Young, 2012; Institute for Teaching and Learning Innovation, 2015). Not only do universities now compete with each other for students, they compete with legitimate and significant alternatives to the traditional university degree. To survive in such tumultuous times, universities must present a high quality and valuable choice for students.

## **The Student Experience**

With the evolution of HE, and global growth of OE, the roles and identities of universities and their students have changed. Students are no longer seen as passive recipients of transferred knowledge, but as active partners in their own education (Universities Australia, 2014). An age of global competition has simultaneously shifted institutional priorities and empowered student choice (Benckendorff et al., 2009). Though debate ensues over preferred terminology, students are increasingly viewed by universities, policy-makers and themselves, as paying customers, or consumers (Khawaja & Dempsey, 2008; Krause, 2005). Conceptualising students as consumers, positions them as the primary stakeholders in an educational transaction, and central to the educational experience. The education consumer, furthermore, brings with them consumer expectations of the product they will ultimately acquire (their qualification), and the services and support they will receive along the way.

Alongside this shift to a student-as-consumer perspective, universities have necessarily evolved to secure their sustainability. An increased focus on student choice, amidst tightening government investment, has required universities to reconceptualise their own identity. Universities are no longer purely agents of knowledge. They have become large organisations that hold responsibility for their own operational, strategic and financial management (Benckendorff et al., 2009). As such, the focus of universities have grown beyond simply selling knowledge, to ensuring their product and services effectively attract and retain students, who are now able to choose amongst a wide range of prestigious institutions and programs world-wide; while simultaneously ensuring the organisation operates as efficiently as possible.

With these new conceptualisations of the student and university, courses and institutions are increasingly scrutinised in terms of the total ‘Student Experience’ (Harvey, Burrows & Green, 1992, cited in Benckendorff et al., 2009). Where once an institution or qualification may have been judged solely on academic outcomes; students’ experiences of learning and associated institutional support are now also of

substantial importance (Benckendorff et al., 2009; Social Research Centre, 2017a). Institutional reputation, and students' decisions to apply to a given institution, depend upon more than just good academic outcomes; they rest upon a positive overall *experience*.

Benckendorff et al. (2009, p. 84) describe the contemporary notion of the Student Experience as extending “beyond the traditional focus on curriculum, assessment and pedagogy to include the extracurricular activities of students and how universities respond to help students manage these commitments”. The Student Experience incorporates more than the experience of learning, or of being taught. It also considers students' lifestyle, external pressures, wellbeing and access to support. Contemporary conceptualisation of a quality course, or university, therefore, must consider not only its academic outcomes, but also students' full lived experiences of being a student of that course/university.

### **Quality and the Student Experience**

Concurrent with a sectoral focus on the Student Experience, increased competition alongside financial and political scrutiny have pushed a quality agenda in HE. Universities must actively verify the value and quality of their courses, to students, the community, policy-makers and industry (Australian Government, 2011; Universities Australia, 2013). Government and institutional measures of quality have evolved accordingly. Numerous surveys and statistical reports have been commissioned in an effort to assess and compare the quality of institutions, and the associated Student Experience (Benckendorff et al., 2009; Social Research Centre, 2017a). One of the most widely used measures of university quality in Australia is the Student Experience Survey (Social Research Centre, 2017b). This comprehensive survey of current Australian HE students, commissioned by the Australian Department of Education and Training, asks students to rate their satisfaction with the quality of various aspects of their experience. Responses are analysed in terms of six indicators: overall quality of educational experience; teaching quality; learner engagement; learning resources; student support; and skills development. These indicators reflect the total Student Experience, conceptualising

quality in terms of students' learning experiences, as well as experiences of support from their university. Graduate surveys, such as the Course Experience Questionnaire, supplement these indicators, demonstrating the academic and career outcomes for students completing HE (Social Research Centre, 2017a). Alongside these surveys, universities report annually on student enrolment and completion to the Tertiary Education Quality Standards Agency (TEQSA), who assess compliance with HE threshold standards (Australian Government, 2017b). Taken together, these measures form a structure of institutional quality; combining students' learning, satisfaction, and retention; in addition to academic success and course completion (pass) rates. Such measures of quality subsequently guide investment of government funding, and associated grants, while directing improvements in institutional strategy and support. Associated reports are also published through the Quality Indicators for Learning and Teaching (QILT), and reported in the media, informing student choice (Social Research Centre, 2017a). A Student Experience that facilitates strong learning, academic performance, satisfaction and retention outcomes, therefore, is essential for institutional quality, and vital for a university's financial and reputational survival.

### **The Online Student Experience**

As a key player in the future of HE, OE is not excluded from this quality agenda, and can be equally conceptualised in terms of the total Student Experience. For those in OE, the Student Experience could be defined as the *experience associated with being an online university student*; incorporating experiences of learning and teaching, central to the course itself; as well as students' broader life circumstances, wellbeing and access to support. Quality OE, therefore, would similarly rest on a Student Experience, which promotes learning, produces strong academic performance, satisfies, and retains students to completion.

While HE as a sector has moved towards a focus on quality across the Student Experience, OE remains largely conceptualised in terms of academic outcomes. Despite adherence to similar measures of quality at the institutional level,

OE research and practice have focused on development and adaptation of suitable curriculum and learning activities for the online environment, with little exploration of what it means to *be* an online student. Though such research is arguably important, a broad empirical understanding of the OSE remains absent, preventing a thorough understanding of what may constitute and facilitate quality OE.

A brief search of the case University website offers some insight into the OSE. Prospective online students are advised they will access course materials and content via a Learning Management System (LMS), with correspondence with instructors occurring primarily via their student email account. Exams will be held at a suitable examination centre within 80 kilometres of the online student's residence and an online system will be used to manage students' enrolment and publication of results. Beyond the course itself, online students are able to access online library catalogues (and request copies of hard-copy materials), and purchase textbooks through the University co-op's online store (Case University, 2016). These descriptions of OE, targeted at prospective students, present an academically centred depiction of the Student Experience. Broader aspects of students' lifestyle and support are less apparent. A deeper search of the University website reveals many student support and administrative services offer telephone and email contacts, yet no explicit explanation guides online students' use of associated services. Online students are, nonetheless, advised they can access campus-based facilities, if they choose (Case University, 2016). Though subtle, this simple review of information for prospective online students illustrates the narrow conceptualisation of what constitutes the OSE, which fails to actively address online students' lifestyle and support needs.

With its growing popularity, OE plays an increasing role in facilitating quality HE, meaning the importance of the broader OSE cannot be ignored. For universities to demonstrate quality through satisfaction surveys and enrolment/completion data, online students must also learn, perform, feel satisfied, and be retained. As such, it is essential universities minimise attrition, maximise student satisfaction, and clearly demonstrate their online courses produce quality

learning and performance outcomes, if they are to survive. Achieving this, however, rests on an empirical understanding of the broader OSE, and its role in student outcomes, which remains incomplete and unclear.

### **Quality in online education**

A clear appreciation of whether strong online student outcomes are possible, and if so, under what circumstances, is essential to satisfy demand and assure a quality OSE. Such an understanding, nonetheless, continues to lag behind the growth in OE. Online courses have been adapted from existing on-campus programs and quickly pushed out to students to meet growing demand, and to appear competitive (Herrington, Reeves, & Oliver, 2005; Oliver, 2005). This has occurred amidst limited empirical evidence for what may constitute quality OE, or the conditions that may facilitate strong online student outcomes. Doubt persists around OE quality, particularly in comparison to on-campus HE; posing a clear risk to the reputation, economic viability and success of OE.

To date, the literature has focused on articulating benefits and limitations of OE, or on demonstrating differences between online and on-campus student outcomes. Although limited, these studies offer suggestions as to how effective OE may be, and why students (or institutions) might pursue OE. The following sections discuss relevant literature on online student outcomes, presenting the empirical evidence to date concerning quality in OE.

### **The benefits and limitations to online education**

With its rapid growth, it is clear OE serves an important need for students, and for institutions. In a review of OE literature, Piotrowski and Vodanovich (2000) identified OE to offer substantial benefits in terms of quick and remote access, which enables universities to reach a larger audience; as well as enhanced convenience, greater speed of communication, the capacity to provide instant feedback, greater facilitation of group work, and cost savings. These findings have been supported by more recent research suggesting OE provides substantial advantages with regard to



time and place flexibility (Serhan, 2010; Stone, O'Shea, May, Delahunty, & Partington, 2016); improved access for non-traditional students, with the capacity to accommodate diverse learning styles and disabilities (Case & Davidson, 2011; Rao & Tanners, 2012); and enhanced efficiency, in terms of both the resources required for study and the time students need to spend on tasks (Lonn & Teasley, 2009; Serhan, 2010). These benefits offer those with work and family commitments the capacity to undertake study whenever and wherever they choose, taking advantage of any spare time, which may not be in conventional working hours or at predictable times. Furthermore, those who are unable to attend classes, whether because of disability, financial stress or their location, may be enticed by the opportunity to study remotely (Henry et al., 2014).

Piotrowski and Vodanovich (2000) also highlighted several limitations to OE. OE can be associated with privacy concerns; poor or limited interactions; technical difficulties; hardware and software restrictions; increased time commitment from instructors; limited training and support; an overemphasis on technology at the expense of content; potential isolation; and information retrieval concerns. More recent studies again support these findings. Technology access requirements, such as speed of internet connection, software and hardware requirements (Parsons-Pollard et al., 2008); the potential for technical breakdowns (Parsons-Pollard et al., 2008; Serhan, 2010); and the degree of technical skills and training required to participate in the online environment (Allen & Seaman, 2007; Trekles Milligan & Buckenmeyer, 2008), have been identified as particular challenges in OE. In addition, the means of interacting with other students and instructors (Delahunty, Verenikina, & Jones, 2014; Serhan, 2010); potential privacy and security issues (Buchan & Swann, 2007; Tufekci, 2008); and the challenge of staying engaged in spite of difficulties, and in the absence of face to face contact (Case & Davidson, 2011; Serhan, 2010; Trekles Milligan & Buckenmeyer, 2008), may present further barriers to effective OE. Negative online experiences reported in the media, such as cyber-bullying, and information privacy concerns, including identity theft and impersonation (e.g., McDougall, 2014; Rowland, 2014), furthermore, may serve to raise the profile of risks associated with OE.

### **Contested online student outcomes**

Alongside the above benefits and limitations, which may attract or deter students/institutions from OE, studies have sought to verify the effectiveness of online courses, in terms of students' academic, satisfaction and retention outcomes. Much of the literature suggests a poor outlook for OE, citing high attrition, high failure rates and dissatisfied students. Some studies, however, suggest OE may offer students an enhanced learning environment, which can *increase* students' motivation to persist, and improve their learning outcomes. Key literature on online student outcomes is presented below, with particular regard to online students' learning and academic performance, satisfaction, and retention. Research in this area has typically compared online student outcomes with those of on-campus students, in an effort to establish validity for OE, and/or to identify a superior mode of delivery. For this reason, online student outcomes are discussed below in contrast to on-campus education. It is acknowledged, nonetheless, that the OSE may differ substantially from that experienced on campus. Factors that may have confounded such comparisons, therefore, are also discussed later in this chapter. It is also noted that much of the research presented below is now somewhat dated, with more recent literature having shifted its focus to evaluating the effectiveness of particular techniques or intervention strategies on online students' success and retention, rather than further comparison to on-campus student retention.

#### ***Online students' learning and academic performance***

Several studies have attempted to compare online students' learning and academic success with that of students studying on campus. In some cases, the research suggests poor learning and performance outcomes for online students. In a comparison of 500,000 online and face-to-face community college courses, for instance, Xu and Jaggars (2014) found students performed more poorly in online courses, with this effect exacerbated for minority, male and less academically prepared students. Breen, Cohen, and Chang (2003) also reported that online students failed an introductory psychology unit more frequently than on-campus students, primarily due to non-submission of assessment or non-attendance at

examinations in the online unit. In addition, Wynegar and Fenster (2009) observed lower grade point averages and higher failure rates for online students, as well as on-campus students engaged in computer-aided instruction, compared with students attending traditional on-campus lectures. There also appears a widespread belief amongst instructors and university administrators that online courses are associated with poorer academic outcomes, compared with traditional on-campus courses (Allen & Seaman, 2014; Association of Public and Land-grant Universities, 2009; Lederman & Jaschik, 2013). It is feasible, therefore, that OE may present particular challenges for student learning, and present a risk to quality with regard to course pass rates and completions.

In contrast, some studies suggest online and on-campus students can be *equally* successful. Chen, Jones, and Moreland (2017) found delivery mode to be a weak predictor of academic performance in advanced accounting courses, with differences more effectively explained by students' cognitive effort. Similarly, Siebert, Siebert and Spaulding-Givens (2006) found students in their online Masters of Social Work course gained increased skills and performed comparably to students in the on-campus program. Seok, DaCosta, Kinsell and Tung (2010) also found students and instructors alike rated online community college courses as effective for student learning. In addition, Driscoll et al. (2012) found online and on-campus students performed equally well in an introductory sociology course, when controlling for student GPA. These findings are supported by several other studies, which have observed similar learning and grade distributions for students participating in online and on-campus courses (e.g., Alexander, Polyakova-Norwood, Johnston, Christensen, & Loquist, 2003; DiRienzo & Lilly, 2014; Parsons-Pollard et al., 2008). Together, these studies suggest it may be possible for online courses to be as effective as on-campus courses, in achieving strong learning and academic performance outcomes.

Some comparative studies have shown potentially *superior* benefits of OE for learning. Twigg's (2003) review of 30 American institutions that redesigned courses to be delivered online, found 20 of these observed significant improvements

in student learning. After explicitly designing their course for online delivery, Clark-Ibanez and Scott (2008) also reported 27 per cent of online students felt their learning was equivalent, and half felt they had learned *more* than in other, on-campus, classes. The introduction of a mathematics emporium at Virginia Tech, which provided anytime access to electronic course materials and exercises in a campus computer lab, likewise resulted in a substantial improvement in student performance (Mills, 2005). OE, therefore, may present valuable opportunities to *enhance* quality through improved learning and performance outcomes, where courses are explicitly designed to meet the learning needs of online students.

### ***Online student satisfaction***

In addition to learning and performance outcomes, satisfaction has been said to differ for online and on-campus students. Several studies suggest online students are less satisfied with their experience (Alexander et al., 2003; Kramer & Bohrs, 2016; Parsons-Pollard et al., 2008), particularly with regards to the level of interaction with instructors and other students (Breen et al., 2003; Siebert et al., 2006). In a survey of students completing a compulsory online unit at Deakin University, for instance, Palmer and Holt (2009) found that, while many students were generally satisfied with their experience, nearly a third were not, indicating substantial concerns for online students' satisfaction. In particular, online students rated clear expectations about what they need to do to perform well and receiving effective feedback on their assessment, as very important, but were dissatisfied with these elements of their experience. Online courses, therefore, may not sufficiently engage students in their learning, or may be experienced as more isolating than on-campus courses, posing a risk to institutional quality.

It is, nonetheless, also possible for OE to have equivalent, and in some cases *enhanced* capacity to satisfy students. Driscoll et al. (2012) found student satisfaction to be equivalent in online and on-campus versions of an introductory sociology course. Twigg (2003) also found a large proportion of courses specifically redesigned for online delivery, were associated with enhanced student attitudes towards the subject matter and increased overall satisfaction. Similarly, Schober et

al. (2006) found internet-based learning materials provided an added motivational experience for students in an on-campus statistics course. In addition, Bolliger and Erichsen (2013) observed high satisfaction ratings for several online courses, with some variation associated with students' personality type. OE, therefore, may also offer opportunities to *enhance* quality through improved student satisfaction, where steps are explicitly taken to engage and motivate students.

### ***Online student retention***

Despite frequent references to high attrition in OE, it is difficult to find conclusive evidence for differences between online and on-campus student retention. Many researchers anecdotally allude to lower course completion and retention rates in online courses (e.g., Carr, 2000; Gleason, 2004; Kramer & Bohrs, 2016; Simpson, 2013; Xu & Jaggars, 2011), with a small number of case studies supporting these assertions. Since first offering online courses at the Borough of Manhattan Community College of the City of New York in 2001, for instance, Hyllegard et al. (2008) found student attrition to be consistently twice as high in online courses, as in on-campus courses. Xu and Jaggars (2011) also observed higher attrition rates for online math and English college courses, compared to on-campus versions. In addition, the Australian Government reported substantially lower completion (46.3% versus 76.3%) and higher attrition rates (46.4% versus 19.9%) for external, compared to internal, students, between 2006 and 2014 (Australian Government, 2017a). It is feasible, therefore, that institutions may struggle to retain online students as effectively as they have in on-campus courses, again posing a risk to institutional quality.

In contrast, some research has suggested online and on-campus courses can retain students *equally*. Van Schaik, Barker and Beckstrand (2003), for example, found no significant difference in attrition rates for an online and an on-campus introductory information technology course. Washull (2001) also found equivalently low attrition rates for both online and on-campus versions of an introductory psychology course. It may be possible, therefore, for online courses to retain students at least as effectively as on-campus courses. It is noted, nonetheless,

that the majority of the above studies were conducted in Australia, the USA or the United Kingdom, and some years ago. It is possible online student retention rates may differ for other, particularly less developed countries, and/or may have improved in recent years. Perhaps in recognition of potential online retention issues, recent literature has shifted its focus to *improving* retention in online courses, rather than further comparison to on-campus student retention. Such research is discussed further in following section, presenting the theoretical basis for learning, academic performance, satisfaction and retention outcomes in OE.

### **A theoretical framework for quality online education**

With contemporary HE quality conceptualised in terms of the total Student Experience, it makes sense to explore OE through a similar lens. If OE is to facilitate outcomes that contribute meaningfully to an institutions' perceived quality, it too must demonstrate strong learning, academic performance, student satisfaction, and retention outcomes. The studies discussed above, however, offer contradictory evidence for online student outcomes. It remains unclear if, and how, OE might contribute to a quality Student Experience. The following section presents the theoretical basis for conceptualising these outcomes, as key indicators of HE quality. Through an understanding of what may contribute to strong learning, academic performance, satisfaction and retention in OE and HE more broadly, this theoretical framework offers a foundation upon which the OSE may be explored, and quality OE investigated.

#### **Learning and academic performance**

Understanding how learning and academic performance may contribute to a quality Student Experience depends on how learning is conceptualised and measured. Recognising academic performance, in terms of grades, pass rates and completions, is itself a measure of learning, the following discussion focuses primarily on conceptualisation of learning. Key learning theory is introduced, with discussion of how different perspectives conceptualise, measure and seek to improve

learning in different ways. Constructivist Learning Theory (CLT) is subsequently identified as the most applicable learning theory for the present research, reflecting contemporary approaches to situated learning in HE (Merriam & Bierema, 2014). Recent literature pertaining to learning and academic performance in HE is then presented, offering an overview of the breadth of factors that may contribute to strong learning and performance outcomes.

### *Learning theory*

There are several schools of thought concerning how learning is conceptualised, measured and improved. Of particular relevance to HE, contemporary Constructivist learning has evolved from two earlier approaches: Behaviourist and Cognitivist learning. These theories are introduced below, with learning positioned as either behaviour or cognition, forming the foundations for modern conceptualisation of learning as constructed and contextualised in the learner's sociocultural environment. CLT is subsequently presented as the theoretical framework underpinning conceptualisation of learning and academic performance outcomes in the present research, bringing together behaviour, cognition and the social context of learning.

#### *Behaviourist Learning Theory*

With its roots in psychology, Behaviourists theorise learning in terms of behaviour. The Behaviourist views learning as a change in behaviour; with the intended outcome of learning being an observable change in behaviour (Merriam & Bierema, 2014). Learning is understood to occur as a result of behavioural reinforcement and conditioning. Reinforced and rewarded behaviour is expected to continue, while behaviour that is not reinforced, or is negatively reinforced, would cease (Merriam & Bierema, 2014). The Behaviourist student, therefore, learns to employ a particular action, in a particular way, in a given situation, through having been rewarded for that behaviour in similar situations. The Behaviourist instructor subsequently seeks to measure learning through the observable demonstration of competencies, with learning evidenced by faster reaction times (Merriam & Bierema, 2014). The Behaviourist approach has been frequently applied in traditional, on-

campus HE, with many traditional learning outcomes articulated in terms of students' demonstrated ability to perform particular tasks, and apply particular skills; as well as the use of feedback mechanisms to reinforce appropriate behaviour (Merriam & Bierema, 2014).

The Behaviourist perspective has been criticised, however, as reliant on a constant environment and observable outcomes. It presents a passive view of learning, with the learner simply reacting to stimulus and reward, without any intellectual understanding of *why* they should adopt particular behaviours (Phye, 1997). The instructor decides what behaviour is appropriate, how it should be rewarded, and what the end goal is. Behaviourism also assumes the student will continue to encounter the same stimuli, and the desired behaviour will continue to produce the desired outcome. In other words, Behaviourist learning assumes the environment remains fixed (Phye, 1997). This limits what students learn, and how that learning might be applied. Every behaviour is essentially determined by prior experience, and nothing more. In today's fast-paced world and rapid technological changes, such learning is unlikely to equip students with the knowledge and skills they need to adapt to continually new and unfamiliar situations.

### *Cognitivist Learning Theory*

In response to the limitations of Behaviourist Learning Theory, a Cognitivist movement emerged. Cognitivist theory views learning as a mental process (Merriam & Bierema, 2014). It places the brain and cognition at the centre of learning, focusing on how information is processed into long-term memory (Merriam & Bierema, 2014). Learning, from a Cognitivist perspective, occurs through the recognition of patterns and intellectual problem solving (Merriam & Bierema, 2014). Faced with a given problem, the Cognitivist student develops rational hypotheses based on existing knowledge, and proceeds to test these hypotheses (Phye, 1997). As such, learning is an outcome of thinking, rather than the experience of reward or punishment. The Cognitivist instructor presents students with a problem to solve, and measures resultant learning by improvements in performance on the same task (Phye, 1997). Again, Cognitivist approaches are common in traditional, on-campus



HE, with the application of instructional design taxonomies focused on cognitive outcomes, such as attention, memory, comprehension, synthesis and evaluation (Merriam & Bierema, 2014).

Cognitivist Learning Theory introduced the learner, more specifically thinking, as playing a central role in learning. It essentially implied the Behaviourist process of overt stimuli-response could be simulated within the mind; with the learner's internal hypothesis-testing determining which rules need to be followed. As such, the goal of learning shifted from demonstrating the right behaviour, to following the right process (Phye, 1997).

While Behaviourist learning relies on a fixed environment, however, Cognitivist learning rests on a fixed understanding of the problem, and the 'correct' means of reaching the solution (Phye, 1997). Again, this positions the learner as passive, simply following a given process to reach a desired solution, without any sense of why the problem warrants following that process, and why that process delivers the best solution. Cognitivist approaches disregard the role of the learner's environment, positioning learning in the mind, and as a function of thinking and prior knowledge; with thinking understood as constant and predictable (Phye, 1997). Cognitivism failed to explain why learners produce different solutions in different situations. Behaviourism, on the other hand, neglected the role of the learner, positioning learning purely as a function of environmental stimuli. Both Behaviourist and Cognitivist perspectives neglect the need for learners to adapt to continuously new situations and problems. Neither theory alone, therefore, is sufficient to explain how and why learning occurs.

#### *Constructivist Learning Theory*

Contemporary learning theory has attempted to bring Behaviourist and Cognitivist perspectives together, introducing the social context of learning, in which the environment and the mind interact. Informed by a pioneer of developmental psychology, Lev Vygotsky, social cognitive theories introduced the idea that learning is socially and contextually bound (Vygotsky, 1962). The learner learns by

observing others and modelling their behaviour (Merriam & Bierema, 2014). This concept of situated learning evolved into CLT.

CLT views learning as the construction of meaning from experiences (Merriam & Bierema, 2014). It combines Behaviourist and Cognitivist perspectives, with the environment and prior knowledge, mediated through the learners' sociocultural context, informing how one interprets, processes and behaves (Phye, 1997). The Constructivist perspective sees knowledge as a constructed rather than transferred, with both the individual and their social context playing a role in the creation of meaning (Merriam & Bierema, 2014). Learning is situation specific and socially mediated, reliant on authentic learning experiences.

Where traditional HE has historically focused on recalling facts, generalisations, concept definitions (Cognitivist); or performance in specified tasks (Behaviourist); the aim of Constructivist learning is quite different (Almala, 2005; Kelm, 2011). In the Constructivist classroom, the instructor teaches for understanding (Richardson, 2003), through emphasis on reasoning, critical thinking, social negotiation, self-reflection, self-regulation and mindful reflection (Almala, 2005). Instructors must go beyond simply presenting information, to achieve knowledge that can be applied to new situations in the future (Herrington et al., 2005; Lesgold, 2004; Wang, 2009). Instructors must help students create their own meaning, through opportunities to link prior knowledge, dispel misconceptions and enrich their knowledge base (Garmston & Wellman, 1994). To achieve this, students must also be active stakeholders in their own knowledge, and that of their peers (Delahunty et al., 2014; Wang, 2009; Yager, 2000). Interaction not only between the instructor and student, and between student and content, but also among students, therefore, is important for Constructivist learning.

Constructivist approaches facilitate learning by prompting students to construct and apply their knowledge (Oliver, 2000). Learning is achieved through "active construction of knowledge supported by various perspectives within meaningful contexts" (Oliver, 2000, p. 2). Effective learning involves active, learner-centred knowledge construction, as opposed to expert-centred knowledge

transmission (Lesgold, 2004; Richardson, 2003). Constructivist learning requires that students have access to a collaborative, challenging and supportive learning environment (Oliver & Herrington, 2002; Wilson & Lowry, 2000). CLT, therefore, suggests the degree of interaction, engagement, collaboration and support; as well as opportunities to question or challenge others in an online course, may influence the depth of learning that occurs (Oliver, 2000). Constructivist principles are evident in contemporary approaches to HE, including self-directed learning, reflective practice and communities of practice (Merriam & Bierema, 2014). Though the remains of Behaviourist and Cognitivist perspectives are still evident in many courses today, contemporary HE, and OE in particular, have steadily moved towards more Constructivist approaches.

The pedagogical approach commonly adopted in OE is consistent with CLT (Herrington et al., 2005; Oliver & Herrington, 2002; Zhang & Perris, 2004). Wilson and Lowry (2000) highlight the internet presents ideal conditions for Constructivist learning, particularly for self-directed learners, as a powerful source of information and diverse perspectives. Sorting and evaluating this information, nonetheless, is also critical. In addition, OE offers the capacity to accommodate diverse learning styles, and encourages greater ownership of students' own learning, reflecting Constructivist approaches (Almala, 2005; Brooks, 2009; Nonis & Fenner, 2011). Social media and online communication forums are similarly valuable platforms to communicate and access information (Gabriel, Campbell, Wiebe, MacDonald, & McAuley, 2012; Kelm, 2011). Interaction in OE, however, is not simply a by-product of participation. Online students must proactively engage with others and purposefully participate in online discussions if they are to succeed (Almala, 2005; Delahunty et al., 2014; Larson, 2009). Perhaps in response to these challenges, discussion forums, wikis and other interactive tools have been used extensively in online courses, supporting the application of Constructivist principles to OE (Mills, 2015; Oh & Kim, 2016; Signor & Moore, 2014).

With Constructivist principles clearly applicable to OE, it is useful to examine online students' academic experiences and outcomes within the context of

CLT. Providing opportunities for online students to formulate their own understanding, and negotiate and apply their learning in real and meaningful ways, may encourage the application of deeper learning strategies (Crosling, Heagney, & Thomas, 2009; Wang, 2009). In addition, timely and regular feedback may assist online students to effectively evaluate their process and adjust learning strategies to improve their performance (Crosling et al., 2009; Tinto, 2002; Tinto & Pusser, 2006).

### ***Learning and performance factors***

Supporting CLT, research has proposed several factors to affect students' learning and academic performance. In particular, strong academic achievement has been associated with deep learning strategies (Chen et al., 2017; Paechter, Maier, & Macher, 2010). Students who employ deep learning strategies are motivated to acquire new knowledge, focus on gaining competencies, are highly engaged, and go beyond the basic requirements for assessment (Richardson & Newby, 2006). Surface learners, on the other hand, are less cognitively engaged and tend to focus on grades, seeking to learn only what is required to pass (Richardson & Newby, 2006).

The depth of students' learning, and associated academic performance, can be affected by students' motivation, self-discipline and self-regulation. Where students are intrinsically motivated, have good self-discipline, and are able to adapt their learning to their strengths and the task at hand, they are more likely achieve superior academic performance (Griffin, MacKewn, Moser, & VanVuren, 2013; Waschull, 2005). Students are more inclined to self-regulate and apply deep learning strategies, furthermore, where they believe they have control over their own learning (Ferla, Valcke, & Schuyten, 2009). Ciampa (2014) suggests students' motivation to learn can be increased by ensuring learning activities are challenging, peak students' curiosity, are within students' control, provide recognition, are somewhat competitive, and provide opportunities for cooperation. Actively making use of academic resources, including lectures and online materials, can also enhance students' engagement and academic performance (Dowel & Small, 2011; Grabe & Christopherson, 2008). Encouraging students to take active ownership of their

learning and fostering interest in course content, therefore, may increase online students' motivation, and inspire the use of deeper learning strategies that result in stronger grades.

Some research has attributed poor academic performance to inadequate student preparation and capabilities. Evidence for academic support and developmental programs being associated with stronger grades supports this link between student capability and subsequent academic success. Preparatory courses, tutoring and study groups, for instance, have been shown to help students gain crucial skills and experience, which enable them to learn more effectively and perform well in undergraduate courses (Tinto, 2002, 2006). As students gain more experience in university studies, furthermore, they begin to apply deeper learning strategies, and become more self-regulating in their learning approaches (Hachey, Wlandis, & Conway, 2012; Richardson & Newby, 2006). In addition to encouraging and supporting the use of deep learning strategies, therefore, facilitating effective learning and strong academic performance may require active development of students' academic capabilities and self-regulation.

#### *Learning versus academic performance*

It must be acknowledged that many of the above studies measured and compared students' learning and success, in terms of formal assessment results. Students' grades or instructor perceptions were typically used as proxy measures for learning. This assumes learning and academic performance are the same construct. It also implies the authority on these outcomes rests with the instructors assigning those results. Such measures exclude students' perceptions of their own learning, however, which may not always match the grades they were assigned (Darrow, Johnson, Meeker Miller, & Williamson, 2002; Grant, Malloy, & Murphy, 2009).

With the purpose of assessment to measure achievement of students' learning, against specified learning objectives, academic performance is, of course, a key measure of effective learning. Students and instructors, however, can hold quite different perspectives on students' capability and what might constitute quality learning and performance outcomes (Darrow et al., 2002; Grant et al., 2009). A

student may achieve high marks, furthermore, without having acquired associated knowledge as a result of their course. A student might perform well without learning deeply, for instance, where assessment focuses on recalling facts, relying on surface learning techniques, or where the student was already highly knowledgeable prior to commencing. Similarly, a student may be awarded high marks, yet feel disappointed with such results, feeling they were capable of performing much better; or may feel assigned marks did not effectively capture what they had learned. Separate investigation of these two outcomes, and an appreciation of the *student* perspective, therefore, is important to enable a thorough understanding of academic quality in OE.

### **Student satisfaction**

Alongside strong learning and academic performance, contemporary views of HE quality have focused increasingly on student satisfaction. Reflecting current perspectives of students-as-consumers, Expectation-Confirmation Theory (ECT) is introduced and discussed below, as the most applicable satisfaction theory for the present research. Recent literature pertaining to student satisfaction in HE is then presented, providing an overview of what has been found to contribute to student satisfaction outcomes to date.

### ***Satisfaction theory***

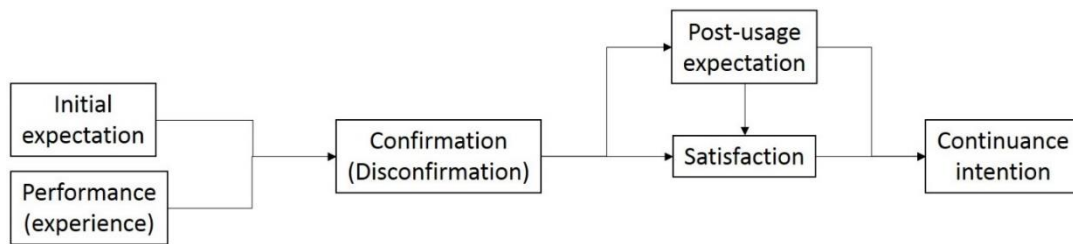
Current HE quality surveys rest substantially on student perceptions and ratings of their experience. Student satisfaction, therefore, is central to a quality OSE. With students increasingly conceptualised as consumers, it is helpful to consider student satisfaction from a consumer perspective. Conceptualisation of student satisfaction may be grounded in an understanding of consumer expectations, enjoyment and fulfilment. In line with this perspective, the degree to which consumer expectations are met has been shown to inform consumer satisfaction (Bhattacharjee, 2001; Lee, 2010; Wu, Tsai, Chen, & Wu, 2006), and this relationship may equally apply to online student satisfaction (Chiu, Hsu, Sun, Lin, & Sun, 2005). As the most prominent theory of consumer satisfaction, ECT is discussed below, and

presented as the theoretical framework underpinning conceptualisation of satisfaction outcomes in the present research.

### *Expectation-Confirmation Theory*

ECT (also called Expectation-Disconfirmation Theory) is commonly applied in consumer behaviour research to explain satisfaction and repurchase decisions, in terms of customer expectations. ECT posits that consumers are more likely to be satisfied, consider the outcome(s) fair, and repurchase a product/service, if it is perceived to have met their expectations, and vice versa (Wu et al., 2006). Specifically, consumer expectations form a base-level frame of reference, to which subsequent experiences are compared. Where the experience of a product/service is below this reference point, negative disconfirmation occurs. Where the experience is above this reference point, positive disconfirmation occurs (Oliver, 1980). Disconfirmation then determines the consumer's level of satisfaction with that product/service, and their level of satisfaction in turn predicts their intentions to continue usage of that product/service (Bhattacharjee, 2001; Lee, 2010).

Some researchers have extended ECT to incorporate post-usage expectations, as illustrated in Figure 1. In the field of information technology, post-usage expectations are typically interpreted as perceived usefulness (Bhattacharjee, 2001; Lee, 2010). Combined with initial expectation (dis)confirmation, perceived usefulness (post-usage expectations) is a significant predictor of user satisfaction and continuance intentions (Bhattacharjee, 2001; Lee, 2010). Post-usage expectations are also affected by the confirmation of initial expectations (Lee, 2010). In other words, consumers' expectations for how useful the experience will be are revised following initial experiences, with revised expectations further contributing to their satisfaction and intentions to continue.



*Figure 1.* The effects of expectations on satisfaction and continuance intentions, according to ECT, incorporating post-usage expectations, based on the extended Expectation-Confirmation Model developed by Bhattacharjee (2001).

With students increasingly perceived as consumers of HE (Khawaja & Dempsey, 2008; Krause, 2005), it is plausible ECT would apply to students in online HE. ECT, in the context of OE, implies that where students' expectations of OE are found to be inaccurate (negative disconfirmation), their satisfaction, evaluation of perceived outcomes, and decisions to continue in their course, may suffer. Revised expectations and anticipated benefits upon completion, furthermore, may subsequently affect online students' satisfaction and retention.

Consistent with ECT, Cherry, Ordonez, and Guilliland (2003) found students' expectations to influence their perceived fairness and satisfaction with an on-campus university course. Students perceived an assigned grade to be fair where it was close to what they had expected (expectation confirmation). Where grades exceeded what was expected (positive disconfirmation), student satisfaction further increased. Buckley et al. (2004) also found where students held inaccurate expectations of their course (negative disconfirmation), they were more likely to feel dissatisfied. Inaccurate expectations led to an impaired ability to cope during the course, and consequently to achieve successful learning outcomes.

Chiu et al. (2005) specifically adapted ECT to OE, decomposing experiences (the performance construct) into three separate constructs: perceived usability, perceived quality and perceived value. All three constructs were found to affect student satisfaction significantly, along with positive disconfirmation of perceived



usability. These findings suggest *exceeding* usability expectations may be especially important for online student satisfaction, along with the experience of a high quality and valuable course.

Applying ECT to the OSE implies students' initial expectations, as well as the perceived usefulness of their experience, established during the online course (post-usage expectations), may influence their satisfaction. Understanding whether or not students' expectations are met (confirmed) upon commencement, as well as how these expectations change during the online course (post-usage), would, therefore, offer further propositions as to how perceived OE quality, reflected in student satisfaction surveys, could be maximised.

### ***Student satisfaction factors***

In addition to the importance of students' expectations, proposed by ECT, several aspects of the Student Experience have been identified to influence student satisfaction. Chiu, Sun, Sun and Ju (2007), for instance, proposed a model for student satisfaction in web-based learning, whereby satisfaction was positively affected by attainment value (the importance students placed on doing well), intrinsic value (how enjoyable it was), distributive fairness (perceived fairness of grading) and interactional fairness (perceived fairness of online interactions with the instructor). Chiu et al.'s model suggests online students may be more satisfied with their experience, where they are sufficiently committed, enjoy the experience and perceive interactions with instructors and grading to be fair. Similarly, Chen et al. (2017) found students in both online and on-campus courses who exerted greater cognitive effort were considerably more satisfied with their course. Calli et al. (2013) also found online student satisfaction to be affected by perceived usefulness, playfulness and multimedia content effectiveness, with perceived usefulness the strongest predictor of student satisfaction. In addition, Kuo, Walker, Belland, and Schroder (2013) found learner-content, learner-instructor and learner-learner interaction, along with internet self-efficacy, to predict online student satisfaction. Meeting or managing student expectations, as well as student motivation and effort,

instructor integrity and valuable course outcomes, therefore may contribute to enhanced online student satisfaction.

### **Student retention**

Alongside learning, academic performance and student satisfaction, student retention is an essential measure of quality HE. High attrition rates may be viewed as evidence of institutional failure and wasted investment. Attrition is not a new concern, furthermore, with student retention extensively investigated over the last several decades, with a wide range of attributes, experiences and strategies suggested to impact students' persistence at university. Student attrition has been shown to be especially problematic during the first year of study, with much of the retention literature focusing on the critical first-year experience (Andrew et al., 2008; Tinto & Pusser, 2006).

It must be acknowledged that definitions and measures of retention can vary between studies, and between institutions, with some equating academic failure and voluntary withdrawal. The precursors of these two outcomes, however, may differ substantially. Academic performance (completion/failure) and student retention, therefore, are considered separately in the present research, with student attrition taken to represent a student's independent decision to withdraw from their course (or units).

Recent literature pertaining to student retention is introduced below, providing an overview of the breadth of factors that may influence online student retention. Two key theoretical models of student retention, reflecting contemporary views of the Student Experience are then discussed: Tinto's (1975) model of Dropout from HE and Kember's Longitudinal-process Model of Drop-out from Distance Education (1989), presenting the theoretical foundations for conceptualising student retention in the present research.

### *Student retention factors*

Despite the plethora of research into student retention and attrition, studies have shown it is rare for any one factor to cause students to withdraw (Jones, 2008). Rather, students may withdraw for a variety of interrelated reasons. Equally, a range of factors may encourage students to persist, and these are not necessarily the reverse of those that prompt students to leave (Tinto & Pusser, 2006). Research to date, nonetheless, has tended to focus on one or two particular factors associated with attrition, resulting in a largely piecemeal understanding of student retention (Longden, 2006; Tinto & Pusser, 2006). As Tinto and Pusser (2006) point out, furthermore, attrition continues to pose problems for universities despite an abundance of research on the subject. This suggests ongoing challenges in applying research to practice, and/or persistent confusion about how all proposed factors might interact to facilitate student retention.

Research frequently points to student characteristics associated with HE attrition. Students who withdraw are more likely to be of minority ethnicity (Jones, 2008; Wastson Scott, 2014); male (Jones, 2008; Olsen & Spain, 2009); and older (Olsen & Spain, 2009; Wastson Scott, 2014). Students' life circumstances have also been suggested to affect attrition. Moore and Greenland (2017), for example, found the primary reason for students dropping out of open-access courses was related to unavoidable employment commitments. Promnitz and Germain (1996) similarly identified employment, personal issues, and finances as important factors contributing to attrition, with unforeseen personal events the most likely trigger for withdrawal in the first year of study. Several studies have also shown students who are working while studying (Jones, 2008; Wastson Scott, 2014); are time poor (Morgan & Tam, 1999; Packham, Jones, Miller, & Thomas, 2004); have a low income (Jones, 2008; Wastson Scott, 2014); or face other personal challenges (Jones, 2008; Wastson Scott, 2014; Wintre, Bowers, Gordner, & Lange, 2006), are more likely to withdraw. In contrast, prior education and academic preparation may be associated with persistence (Jones, 2008).

Institutional and course characteristics can also influence student retention. Having interpreted several decades of literature, and conducted their own pivotal research into student retention, Tinto and Pusser (2006) summate that five conditions promote student retention: institutional commitment; high institutional expectations; academic, social and financial support; feedback; and student involvement/engagement. They posit that where universities actively strive to facilitate these conditions, student retention may be enhanced. Crosling et al. (2009) similarly argue the curriculum is critical to student retention. Specifically, to promote student retention, courses should be student-centred; provide a context-relevant induction; engage students early; be culturally and personally relevant; connect with students' workplace experiences; incorporate interactive teaching; offer proactive and integrated academic support; and provide formative assessment and feedback. Such curricula also reflects CLT.

In regard to OE, Stone (2017) recently developed a set of national guidelines for improving online student retention and completion outcomes. Based on examples of best practice OE across Australia and the United Kingdom, Stone developed ten recommendations for improving online student outcomes. Specifically, Stone suggests universities need to: understand online student demographics; develop, implement and review quality standards for online delivery; actively address student expectations and skill development; explicitly value and support the role of online instructors; purposely design courses for online delivery; engage and support students through content and course delivery; build institution-wide collaboration; regularly communicate with students; apply learning analytics to tailor the learning experience; and invest in OE. Through these strategies, students may be enticed to persist and enabled to succeed in OE.

Research suggests online students may withdraw for a variety of interrelated reasons, including technical difficulties, personal problems, external pressures, and a lack of time (Hyllegard et al., 2008; Packham et al., 2004). Packham et al. (2004), for instance, identified the prime causes of withdrawal from an online entrepreneurship program were technical problems, pressures associated with

employment, and a lack of time. Strong online student retention, on the other hand, has been associated with the completion of online orientation programs, an internal locus of control, course flexibility, perceived course compatibility with student needs, self-efficacy, and students' social, technical and communication competencies (Chang et al., 2015; Haas, 2015; Lee & Choi, 2013; Lee, Choi, & Kim, 2013; Yu & Richardson, 2015). In addition, Cochran et al. (2014) found academic experience to be the strongest predictor of online student retention, with lower grades and previous withdrawal from an online course associated with a greater likelihood of subsequent attrition. Several studies, furthermore, have linked consumer satisfaction with continuance intentions (Chiu et al., 2007; Lee, 2010; Park & Choi, 2009; Wu et al., 2006); suggesting online student outcomes may also be somewhat interrelated. It remains unclear, however, if and how online delivery itself may result in increased propensity towards attrition.

### ***Tinto's (1975) Model of Student Dropout in Higher Education***

Acknowledging the complexity of student retention, some researchers have attempted to explain student persistence and attrition in terms of a perpetual decision-making process. A pioneer of student retention theory, Vincent Tinto (1975), proposed a Model for Student Dropout in HE, which remains the most widely accepted theoretical model of student retention, shown in Figure 2. This model synthesised research on specific retention factors, recognising the particular importance of students' commitment to the goal of completing their qualification and to their institution, and the antecedents and impacts of this commitment. Specifically, Tinto argued students' family background, individual attributes and prior schooling inform their expectations, and subsequent goal and institutional commitment. The congruence between these commitments and the academic and social systems of the institution, then determine students' academic and social integration, and subsequent commitment to their goal and institution, which, in turn, inform decisions to persist or withdraw.

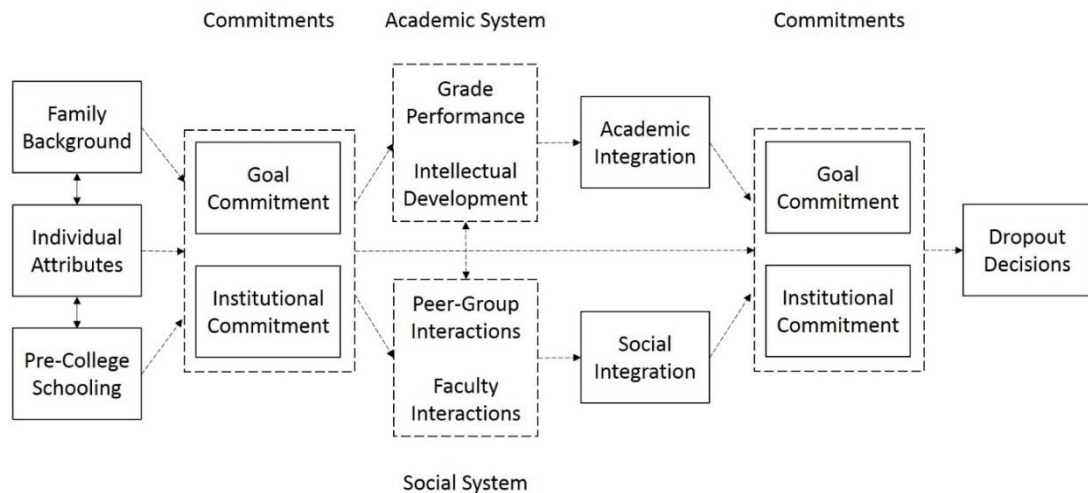


Figure 2. Tinto's Model for Student Dropout in HE (1975, Figure 1).

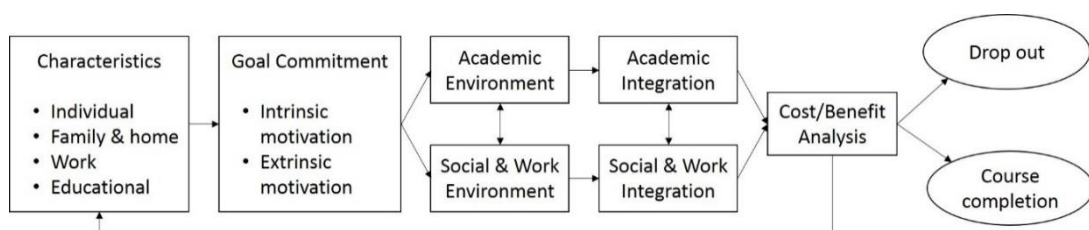
Tinto's (1975) model suggests individual student characteristics play an important role in establishing students' expectations of university, and how likely they are to succeed; informing their selection of, and commitment to their chosen course and institution. These characteristics include students' family background, incorporating their socioeconomic status and parental education; as well as family relationships, and family members' support and expectations for students' studies. Students' ability and personality form their individual attributes. Prior schooling complements these characteristics, incorporating prior academic performance and experiences, forming students' aspirations and perceptions of their own ability. These characteristics determine the strength of students' commitment to completing their course, and to their institution.

Throughout students' educational journey, their commitments are continually tested and adjusted, as a result of ongoing social and academic experiences (Tinto, 1975). High grades and intellectual development serve as extrinsic and intrinsic rewards, demonstrating students' academic integration. Alongside these academic experiences and rewards, students interact with peers and instructors, forming friendships and support networks, strengthening their sense of belonging to the institution. Connection with others who are academically integrated subsequently reinforces students' own academic integration. Having integrated academically and

socially, Tinto's model suggests students' commitment is then further strengthened, encouraging their persistence.

### ***Kember's Longitudinal-process Model of Drop-out from Distance Education (1989)***

Kember (1989) adapted Tinto's (1975) model to the context of distance education, developing a Longitudinal-process Model of Drop-out from Distance Education, illustrated in Figure 3. Kember (1989) argued student characteristics; goal commitment; integration into academic life; integration of students' work, family, academic and social lives; academic ability; and social and work situations, all feed into an individual's analysis of the costs and benefits of continuing their studies. As with Tinto's model, Kember suggests students' characteristics influence their goal commitment. Reflecting the unique context of distance education, however, Kember broadened Tinto's student characteristics, placing greater importance on students' situation and family life, and incorporating students' employment situation, as well as non-school education. Formulating student retention as an ongoing decision-making cycle also allowed Kember to situate commitment only once in each decision process. This goal commitment is informed by students' characteristics, which motivate students, intrinsically and extrinsically, to seek particular careers and/or qualifications. Strong intrinsic motivation, in particular, strengthens students' goal commitment.



*Figure 3. Kember's Longitudinal-process Model of Drop-out from Distance Education (1989, Figure 3).*

According to Kember (1989), students' commitment is tested by concurrent experiences of their academic, social and work environments, as students attempt to

integrate these three components of their lives. Congruence between the curriculum and students' interests and aspirations facilitate academic integration; while effective management of the demands of their studies alongside family, work and social commitments, facilitates students' social and work integration. A cost-benefit analysis is subsequently conducted, where students decide if the perceived benefits of achieving their goal are sufficient to warrant the opportunity costs of persisting. Students progress through the model several times throughout their course, continually evaluating the costs and benefits in light of their current circumstances. It is when the costs begin to outweigh the benefits that a distance education student may decide to withdraw.

With OE representing the technological evolution of distance education, Kember's (1989) model appears well suited to online student retention. Like Tinto (1975), Kember's distance education model demonstrates retention is not simply a function of student characteristics, circumstances, curriculum, or a combination of these factors. Rather, it is a subjective and highly personal decision-making process. A deep understanding of the Student Experience, reflecting students' own perceptions, therefore, is critical to interpreting how and why students might withdraw from an online course. Reflecting contemporary HE perspectives of the total Student Experience, with a range of factors likely to affect students learning, academic performance and satisfaction, Kember's Longitudinal-process Model of Drop-out from Distance Education is applicable to conceptualisation of the OSE, forming the theoretical foundation for student retention outcomes in the present research.

It is acknowledged, nonetheless, that Kember's (1989) model was developed some time ago, before OE was commonplace. Technical and pedagogical advances since 1989 have likely resulted in notable differences between Kember's distance education context, and today's OSE. Distance education students in 1989, for instance, may not have had access to regular synchronous communication with instructors and peers, with limited choice of learning materials (Moore et al., 2011). Kember's model, nonetheless, remains the most appropriate and applicable theory



for online student retention; with much of the recent retention literature focusing on discrete retention risk factors or remedial interventions, rather than the formulation/clarification of comprehensive theory to explain online student retention.

### **Confounding factors and gaps in prior research**

With these theoretical conceptualisations in mind, the contradictions in reported online student outcomes to date could be explained by several potentially confounding factors. The theories discussed above suggests students' learning, academic performance, satisfaction and retention may well be a function of student, instructor and institutional characteristics, which likely differ not only from course to course and institution to institution, but also between online and on-campus programs that are assumed to be equivalent. This range of possible experiences makes it difficult to ascribe effectiveness to the specific medium of either online or on-campus delivery, and, therefore, to identify what might facilitate a quality OSE.

To date, OE research has been predominantly grounded in the understanding of education as it happens (or used to happen) on campus. Little consideration is given to fundamental differences between the OSE and that of being on campus; with universities and researchers alike attempting to fit online courses into the prescribed pedagogy of existing on-campus courses, with little acknowledgement of these differences (e.g., Parsons-Pollard et al., 2008; Tanner et al., 2009; Wynegar & Fenster, 2009). Some fundamental differences between the on-campus and OSE, which may account for varying reports of online student outcomes, are discussed below.

### **Online versus on-campus Student Experiences**

Though one may consider an online course to cover identical content to a corresponding on-campus program, the design and delivery of online and on-campus curricula and associated experiences, may differ substantially. The assertion of problematic online student outcomes is frequently cited in the literature (e.g., Carr,

2000; Gleason, 2004; Kramer & Bohrs, 2016), despite limited empirical evidence to suggest it is *online delivery* itself that produces such outcomes. Rarely does the literature effectively describe the basis of such comparisons beyond combined institutional rates (e.g. Hyllegard et al., 2008; Simpson, 2013), or the implementation of a new online element to an otherwise on-campus course (e.g. Mills, 2005; Wynegar & Fenster, 2009). To effectively compare these two modes of delivery, however, one must be confident they are otherwise comparing like with like. Consider, for instance, an on-campus course that requires weekly attendance at a two-hour lecture and participation in a one-hour tutorial, during which students interact with instructors and work closely with other students. Students must complete a series of assessment tasks, and have the capacity to drop in on instructors for further assistance. Compare this, with an online course that intends to deliver the same content and requires completion of similar assessment tasks, but which offers *optional* podcasts of on-campus lectures, with little or no required interaction with instructors or other students, and no formal requirement to actively participate, other than to submit assignments by nominated deadlines. It would not be surprising for such programs to differ in their outcomes, as students in each mode may engage with their learning in fundamentally different ways (Stone, 2017). In many cases, however, insufficient information is provided in the literature to effectively discern the underlying design of compared programs, and, therefore, to determine whether respective online and on-campus Student Experiences were, in every sense, equivalent, and to account for potentially confounding variables.

### ***The role of instructor and student***

With OE commonly reflecting CLT, there requires a shift from traditional (Behaviourist/Cognitivist) roles of instructor and student. Given the ease with which electronic course materials can be made available to online students (and reused), the role of instructor as content expert may seem of lesser significance than in on-campus courses (though still valuable). Traditional on-campus courses have historically been instructor or expert-centred, with students passive recipients of information (Oliver, 2005; Oliver & Herrington, 2002). In Constructivist OE, the

function of instructor moves from topic expert to knowledge facilitator; while students must become more active in the construction and application of their own knowledge (Alexander et al., 2003; Barber, 2012). Consequently, online students may have greater responsibility for their own learning; requiring them to possess greater self-discipline and intrinsic motivation, and to dedicate more effort to reading and digesting course materials, than would students in a traditional classroom setting (Case & Davidson, 2011; Tanner et al., 2009). It should be acknowledged, nonetheless, that on-campus education has also moved towards more student-centred pedagogy (Crosling et al., 2009), albeit at a slower pace (Oliver, 2000; Picciano, 2006), with many Australian universities undertaking institution-wide curriculum reviews in recent years (e.g., De Jong, Cullity, & Ashton, 2011; Oliver, Jones, & Ferns, 2010; The University of Western Australia, 2010).

### *Technology and the curriculum*

The intensive use of technology in OE may also influence the design of online courses. Developing courses in an LMS requires course designers to consider, plan and organise how a course is designed and delivered, thereby encouraging strong pedagogical design. The same level of effort may not always have been exercised in preparing for traditional on-campus courses (Oliver, 2005; Picciano, 2006). A standardised structure and layout within the LMS, or the desire to adopt particular technology, can also inadvertently direct the design of online courses (Herrington et al., 2005; Picciano, 2006; Vogel, 2010). In addition, the use of online tools may create fundamental differences in the way students interact with content, and each other. Some instructors may lack specific training in how to design courses for online delivery, and/or how to use available tools to enhance learning, furthermore, and may attempt to simply adapt existing on-campus activities to the online environment, or focus on applying available technology, at the expense of well-formulated pedagogy (Herrington et al., 2005; Picciano, 2006; Vogel, 2010). The application of technology, therefore, may affect the underlying pedagogy of a course, resulting in further differences between online and on-campus Student Experiences.

### ***Interaction and communication***

Interaction is essential for Constructivist learning (Wang, 2009), has been shown to affect student satisfaction (Kuo et al., 2013), and may facilitate the social integration necessary for student retention (Kember, 1989; Tinto, 1975). Interaction with content, instructors and peers, however, can differ for online and on-campus students. Research suggests OE may be more isolating than on-campus education, with a lack of interaction often cited as a significant limitation to OE (Lederman & Jaschik, 2013; Moody, 2004; Serhan, 2010). Where a course lacks sufficient or meaningful contact with instructors and peers, therefore, online students may be more inclined to feel socially isolated than they would in a campus environment, surrounded by instructors and students every day (Delahunty et al., 2014; Moody, 2004; van Schaik et al., 2003). Because of this increased isolation, online students' learning, satisfaction and retention may be jeopardised.

Online communication tools can also facilitate and encourage interaction between students, and between students and instructors, which may differ from the interaction experienced on campus. Tools, such as email, digital drop-boxes, electronic bulletin boards and virtual chat, can offer convenience; and enhance student participation, collaboration, critical thinking, problem solving and group work (Picciano, 2006; Santhiveeran, 2005). Asynchronous discussion forums, in particular, may enable students to take their time in preparing responses and reflect critically on others' comments (McGinley, Osgood, & Kenney, 2012; Santhiveeran, 2005). As a result, responses may be more informed, informative and comprehensive; with more students engaged in the conversation, than in synchronous and spontaneous classroom discussions (McGinley et al., 2012; Picciano, 2006). In contrast, online students may miss out on physical interaction, spontaneity, and humour of the moment, experienced in synchronous face-to-face interactions (Picciano, 2006). Online students may also receive fewer visual or context clues and opportunities for immediate dyadic communication (Delahunty et al., 2014; Tanner et al., 2009). The way in which students are encouraged to communicate and interact online, therefore, may offer some significant challenges, but also meaningful opportunities for enhanced connection, collaboration and

Constructivist learning in online courses. These conditions, nonetheless, may differ from those experienced in an on-campus course, affecting comparative research findings.

The means of communicating electronically can also differ in many ways to that of conversing in person (Suler, 1997). Online communication involves a number of strategies rarely used in face-to-face settings, such as individuals taking on various roles simultaneously (Hirt-Marchand, 2005), and an extreme reliance on text and language (Suler, 1997). In the absence of visual and audio information, students may also be more inclined to revert to stereotyping (Jacobson, 1999). Misunderstandings may be more common, comments may be taken out of context, and errors can result in miscommunication (Im & Chee, 2006; Suler, 1997). The pseudo-anonymity offered by text-based electronic communication, furthermore, can serve to disinhibit users from discussing taboo topics, or from behaving in socially unacceptable or unconventional ways (Fox, Morris, & Rumsey, 2007; Martens-Baker, 2009; Suler, 2004). It is acknowledged, however, that the above observations were made some time ago, and online communication tools have steadily evolved in recent years. Audio-visual content is now readily applied in modern OE (Lambrinidis, 2014; Rao & Tanners, 2012; Resop Reilly, Gallagher-Lepak, & Killion, 2012), supplementing and mitigating some of the limitations of text-only communication (Lambrinidis, 2014; Rao & Tanners, 2012; Resop Reilly et al., 2012). Where communication remains text-based, nonetheless, the unique multi-tasking opportunities, lack of non-verbal cues and potential anonymity are likely to persist.

Differences may also exist in the way online and on-campus students interact within the same online environments. Xie, Lin, and Zhang (2001) found campus-based students preferred to use an alias when participating in online discussions, tended to have more lively conversations and more proactively interacted with other students, compared with fully online students. In contrast, online students preferred to use their real names and were more pragmatic in conversations with instructors and other students. Online students therefore, may lack the equivalent sense of

connection to their peers as on-campus students, even when interacting in the same online environment. Such differences may further confound evaluations of online student satisfaction and retention.

In addition to online communication differences, class size and instructor accessibility may affect the capacity for, and depth of interaction in OE. On-campus enrolments are typically restricted by the physical resources available to accommodate students (Tanner et al., 2009). Participation may be limited by how many students can be seated in campus venues, and how many students instructors are able to assess. Universities may subsequently place limits on how many students can take an on-campus course. In OE, however, electronic course content, in theory, can be made available to an unlimited number of students via the LMS. Where electronic or automated marking is used, students can also receive immediate feedback, without relying on direct interaction with instructors (Jones, 2011). It is theoretically possible, therefore, for enrolment limits to be lifted and instructors able to take responsibility for a much larger cohort in an online course, than would be the case on campus (Parsons-Pollard et al., 2008; Terry, 2001). An increased enrolment capacity for online courses could hence enable much larger class sizes, resulting in fewer opportunities for personalised interaction with instructors, than would smaller, on-campus classes.

### ***Instructor workload and training***

While technology may facilitate greater opportunities for automation of learning activities, the assertion of unlimited capacity in OE challenges research suggesting OE can demand a substantial time commitment from instructors. Tomei (2006) found online teaching required at least 14 per cent *more* time than traditional, on-campus instruction. In particular, the amount of time required for advisement, content delivery and assessment in online courses increased according to the number of students, suggesting the more students in an online cohort, the greater the time demands on instructors. Expectations, such as daily participation in the virtual classroom and accelerated turnaround times for feedback, can also place further strain on online instructors (Allen & Seaman, 2007; McAllister, 2009; Mupinga et

al., 2006). Instructors may not always be equipped or supported, furthermore, to dedicate the effort required to deliver OE well. Online teaching may require substantial time and effort, yet additional time and rewards for online course development and instruction are not always allocated to teaching staff (Moody, 2004; Oomen-Early & Murphy, 2009; Swarat, 2015). It would be unwise, therefore, to assume online courses could accommodate a greater number of students than on-campus courses, and achieve equivalent outcomes, with the same, or fewer, resources. Rather, an online course may ideally have *less* students (or more instructors) than a traditional class, with 12 students the ideal maximum, according to Tomei (2006).

Concerns have also been raised regarding the skills necessary to teach online (Herrington et al., 2005; Oomen-Early & Murphy, 2009; Swarat, 2015). Training and experience in traditional learning pedagogy alone may be insufficient to prepare instructors for online teaching. In addition to fundamental teaching and learning techniques, online instructors need to be proficient in using computers, specialised software and the internet; and may be required to apply different learning pedagogy, moving from traditional instructor-focused, to student-centred, Constructivist OE (Herrington et al., 2005; Lambrinidis, 2014; McAllister, 2009; Picciano, 2006; Vogel, 2010). As technology continues to evolve, instructors must also regularly update their learning to stay abreast of emerging tools and innovative approaches. Where several responsibilities compete for instructors' time, however, more familiar activities, and those which are more formally or overtly valued by the institution (e.g., on-campus activities, research output) may be prioritised, leaving online cohorts neglected (Association of Public and Land-grant Universities, 2009; Swarat, 2015). In the absence of sufficient time and/or training, instructors may rely on their experience in traditional teaching, or simply provide online access to existing course materials; which is unlikely to achieve equivalent outcomes (Herrington et al., 2005; McAllister, 2009; Savoy, 2009). Conflicting reports of online student outcomes, therefore, could relate to the particular skills, experience and availability of instructors, rather than a reflection of online delivery per se.

### ***The learning environment***

Online and on-campus students may also experience different learning environments. The aforementioned advantages and limitations of OE offer a window into the specific conditions associated with OE. Online courses can be flexible and delivered asynchronously, allowing students to choose when and where they study (Case & Davidson, 2011; Serhan, 2010; Stone et al., 2016). On-campus students, on the other hand, typically attend scheduled classes at a given location, with synchronous course delivery. In OE, furthermore, the institution cannot control the immediate circumstances in which students engage, nor are these necessarily consistent. It is possible for online students to study while at work, or while looking after children, rendering them prone to distractions or interruptions. Others may have a dedicated quiet study space. In contrast, on-campus students can be regularly removed from distractions, and placed in a room with like-minded students. This makes it difficult to both generalise characteristics of the learning environment for online students, and to compare such circumstances with on-campus learning situations.

### ***Support services***

Supplementing the curriculum and learning environment, a quality Student Experience rests upon a complex framework of academic, social and personal support (Savitz-Romer & Jager-Hyman, 2009; Smith, 2005). Constructivist learning requires a supportive learning environment, with access to peer and instructor support (Oliver & Herrington, 2002). Successful academic and social integration in Kember's Longitudinal-process Model of Drop-out from Distance Education (1989), also depends upon the academic and social environment facilitated by the institution. Recognising this, universities have attempted to improve the retention and success of students with diverse needs, through the provision of support services, such as technical support, career and course advice, counselling and disability services (Promnitz & Germain, 1996; Tinto & Pusser, 2006). Support is equally important for online students (Picciano, 2006). To effectively engage with electronic content, in particular, it is vital online students (and instructors) have access to technical



support, available outside of business hours and accessible remotely (Alexander et al., 2003; Piotrowski & Vodanovich, 2000). Furthermore, online students may require additional support in learning to manage their time and use learning technology effectively (Hanover Research, 2012).

Online students may not have access to the same supportive environment as on-campus students (Gleason, 2004; Hanover Research, 2012; Smith, 2005). Many of the standard university support services may not be accessible to online students, or may be severely limited (Hanover Research, 2012; Oomen-Early & Murphy, 2009). While online students may be enticed and encouraged to study whenever and wherever they choose, and course design may accommodate this, student support may not be so flexible. Support may not be available when a student studying late at night requires assistance, for instance, and remote students may struggle to access equivalent on-ground services locally. Being unable to access support in times of need could place an increased barrier to successful learning and retention. At its extreme, the absence of support may prevent students from accessing content or submitting critical assessments (Buchan & Swann, 2007). Limited access to support, therefore, may confound reported online student outcomes, when compared to on-campus situations.

### ***Student demographics and context***

Finally, several characteristics of online students, and their circumstances, may differ from traditional on-campus students. The accessibility of OE for less traditional students, such as those living in remote locations or students with disability (Henry et al., 2014; Ilgaz & Gulbahar, 2015; Rekkedal, 2011), as well as the benefits observed for students who are time-poor due to work or family commitments (Henry et al., 2014; Moody, 2004), may equate to substantial differences between online and on-campus student cohorts. Driscoll et al. (2012) found online students in an introductory sociology course were more likely to be older, have taken more online courses, work more hours during the week, have a lower GPA, and to have enrolled in fewer credit hours. Xu and Jaggars (2011) also found students who chose to study online were more likely to be older, female,

seeking technical careers, white, fluent English speakers, receiving financial aid, enrolled in fewer units, and to have stronger academic preparation. Similarly, Hyllegard et al. (2008) found online students tended to be older, disproportionately female, and were more likely to have completed developmental programs, than their on-campus peers were. These demographic and situational differences between online and on-campus student populations, therefore, may confound comparative studies. Such differences were recognised by Kember (1989) in his adaptation of Tinto's (1975) student characteristics component, reflecting a more mature cohort with greater family and work commitments.

Given these unique online student characteristics, reports of greater attrition in OE could relate to a self-selection bias; in that students who enrol online may also be the type of student more likely to withdraw (Xu & Jaggars, 2011). Students who withdraw from HE are more likely to be of minority ethnicity, working more hours, time poor, on a low income, and to have faced financial pressures or personal challenges (see *Student retention*, page 40). These attrition factors reflect several online student characteristics. Online students may, therefore, withdraw for the same reasons as on-campus students, but may be more likely to experience attrition triggers (Willging & Johnson, 2009). Online students, for instance, may have more non-study obligations, such as work or family commitments (Carr, 2000; Henry et al., 2014). Where they choose to study online to accommodate these employment or family commitments, the conflict between work/caring and study could result in additional challenges, and a propensity towards attrition (Jones, 2008; Packham et al., 2004; Wastson Scott, 2014). Reports of greater attrition in OE, therefore, may be confounded by greater representation of less traditional students, and those with greater vulnerability to attrition.

Some studies, nonetheless, have suggested a different profile for withdrawn students. Male and less academically experienced students, for instance, have been shown more likely to withdraw from some courses (Jones, 2008; Olsen & Spain, 2009), contrary to the typical online student profile. Lykourantzou, Giannoukos, Nikolopoulos, Mpardis, and Loumos (2009), furthermore, found student

demographics to have lesser predictive power on attrition, than students' behaviour during a course. Online student attrition is likely, therefore, to rely on a far more complex array of factors, than students' characteristics or circumstances alone, as conveyed by Tinto (1975) and Kember's (1989) retention models.

### **Differences between Online Student Experiences**

In addition to potential differences between the on-campus and OSE, experiences can vary substantially among different *online* courses. Inconsistent OE terminology is applied across the literature, with conceptualisation of what constitutes OE ranging from simple access to downloadable lecture notes, to fully interactive online modules (Allen et al., 2004; Oliver, 2005). The line between online and on-campus learning can also be blurred, with today's courses frequently employing online tools, such as email and LMS, while being classified as *online*, *blended*, or *on-campus* courses (Moore et al., 2011; Norton et al., 2013). This diversity within OE, and associated terminology, further complicates interpretation of OE literature.

Understanding the pedagogy and learning activities employed in an online course is critical to identifying equivalent controls, and interpreting quality through online student outcomes. It is not implausible, for instance, to expect units simply providing copies of on-campus lecture notes with no meaningful engagement or interaction, might limit online student success, satisfaction and retention (Lesgold, 2004; Wang, 2009; Yager, 2000). Units that are redesigned with OE at heart, on the other hand, are more likely to employ rich pedagogy that seeks to actively engage online students, thereby enhancing student success and satisfaction (Clark-Ibanez & Scott, 2008; Savoy, 2009; Twigg, 2003).

Investigating what facilitates a quality OSE also requires an understanding of how important particular elements of the OSE may be. Simonson (2008) describes the perfect online course in terms of three components, each incorporating a range of ideal strategies that lead to effective online course design: course structure, or the pace and timing of learning activities; course content, the learning activities

themselves; and artefacts of learning, the assessment tasks and provision of feedback. Similarly, The Concord Consortium (2006) suggest quality OE requires asynchronous collaboration; explicit schedules; expert facilitation; inquiry pedagogy; community building; restricted enrolment; high quality materials; purpose-built virtual learning spaces; and ongoing assessment. At the case University, quality standards have also been developed to guide the effective design of online units (Case University, 2014a). These standards cover the provision of unit information and introductions; learning outcomes; assessment and feedback; learning design and delivery; learner support and resources; student motivation and engagement; structure, organisation, usability and accessibility; and quality assurance.

Regardless of best practice guidelines, the majority of OE studies provide little description of the design associated with the online courses being evaluated, or that of the courses to which they are compared. While comparative studies occasionally refer to how online course materials are delivered (e.g., Alexander et al., 2003; Breen et al., 2003; Wynegar & Fenster, 2009), rarely are other dimensions, such as interaction with peers and instructors, the pace and timing of learning activities, the nature of assessment, or the provision of feedback, discussed. Without detailed description of the associated OSE, it is difficult to interpret the literature and make informed assessments of how online and on-campus student outcomes might compare, or what might make one model of OE more effective in educating, satisfying and retaining students, than another. Potential differences in the applied pedagogy and design of online courses, therefore, could confound comparative studies.

The diversity of OE approaches, and potentially confounding factors in online/on-campus comparison studies, highlight significant gaps in current understanding of the OSE. With limited conclusive evidence for online student outcomes in their own right, or confirmation of what contributes to these outcomes, ensuring a quality OSE remains a game of trial and error. A deeper investigation into the OSE, which allows new factors to be illuminated, while considering the diversity in associated pedagogy and the breadth of possible influences on the Student

Experience, therefore, is critical. Without this, universities may struggle to meet students' needs effectively, and to convince all stakeholders of the value and quality of their online courses.

### **Student expectations of online education**

In addition to accounting for potentially confounding factors in evaluation studies, it is important to consider the influence of students' expectations on online student outcomes. ECT specifies the importance of accurate student expectations in facilitating student satisfaction, and subsequent continuance intentions (Bhattacharjee, 2001; Lee, 2010). Krause (2005, p. 9) asserts that universities should investigate, monitor and manage students' expectations, particularly during the first year "as their early experiences of met or unmet expectations play such a significant role in shaping the rest of their experience". Student motivation is also a significant predictor of learning and academic performance (Griffin et al., 2013); while student satisfaction and the perceived relevance of a course to current and future goals may affect students' intentions to continue with OE (Chiu et al., 2007). Clear learning goals and accurate expectations when commencing, therefore, may help motivate students to actively participate in their learning (Lau, 2003). Limited research to date, however, has openly investigated students' expectations of OE, or the role of such expectations in students' subsequent experiences and outcomes.

ECT suggests ensuring a successful and satisfying OSE relies on students having accurate expectations of OE. It is feasible that where online students' experiences meet (or exceed) their expectations, students may feel satisfied, and persist with their studies (Anderson, 2008; Trekles Milligan & Buckenmeyer, 2008). A mismatch between students' expectations and subsequent experiences, on the other hand, may account for some reports of poor online student outcomes. Exploring the connection between expectations and experiences, therefore, may help in interpreting online students' outcomes. A comprehensive understanding of students' expectations of OE, and how these might inform their experiences and outcomes, however, remains limited in the literature.

Considering the wealth of career and course advice targeted at prospective students, it is clear universities appreciate the importance of accurate student expectations. Retention studies frequently site course or institutional mismatch ('the course wasn't right for me') as reasons for withdrawal; recommending enhanced pre-commencement information and advice to remedy this (Assiter & Gibbs, 2007; Jones, 2008). Likewise, orientation programs have been shown to reduce attrition through early clarification of student expectations (Haas, 2015). Longden (2006, p. 173), however, poses an important question: "should universities faced with high first-year non-completion rates expect students to accommodate to university life, or should they seek to adjust institutional culture to adapt to changing student demands and expectations?" Guiding and correcting students' expectations is only one part of the equation. Universities must also seek to understand and meet the expectations of their students, as primary stakeholders in the OSE. If expectations are indeed important for student satisfaction and retention, it is critical universities know *what* students expect, so these expectations can be actively met, clarified or managed (Stewart, Waight, Norwood, & Ezell, 2004).

A handful of studies have sought to identify inaccurate student expectations of HE. In Stewart, Waight, Norwood and Enzell's (2004) evaluation of online courses, online students agreed with statements suggesting they expected positive interactions with their course materials and instructors, as well as adequate access to resources and support staff. From a broader HE perspective, Scutter, Palmer, Luzeckyj, Burke da Silva, and Brinkworth (2011) found university students expected to be able to work while studying, that instructors would provide all materials required for their learning, and attending lectures and developing relationships with their instructors would be the most important factor in a successful university experience. Students held inaccurate expectations, however, about the amount of time they would need to spend on their studies, and anticipated shorter turnaround times for assignment feedback than they were likely to experience. Pritchett (2009), nonetheless, found no difference in expectations for students who completed and those who withdrew from an online course, suggesting inaccurate expectations may not always cause students to withdraw from their studies. Few studies have sought to

explain precisely *what* students expect of OE, however, with much of the research to date relying on students' ratings of predefined expectations, assumed relevant, and on adjusting students' expectations to match the existing state of OE. The expectations students bring with them to an online course, and the role these play in subsequent experiences, and outcomes, therefore, warrant further investigation.

### ***Suitability for online education***

As highlighted in Tinto's (1975) retention model, students' expectations and commitment to their studies, may be informed by their individual attributes, situation and background, with particular characteristics making students more or less prone to attrition. The literature frequently points to online students' poor preparation, associated with inaccurate expectations, and low suitability, as key factors in academic failure and attrition. Trekles Milligan and Buckenmeyer (2008), for instance, argue students need technical, study and communication skills, appropriate dispositions and literacies, to succeed in OE. In particular, online students require access to, and knowledge of technology and systems they will need to use (Tanner et al., 2009). Trekles Milligan and Buckenmeyer (2008), however, found some online students did not own a computer, and many may lack the skills necessary to succeed in the online environment.

It is also essential online students have good self-efficacy, self-regulation and time management, in order to manage their participation within a flexible learning context (Anderson, 2008). Inexperience may render students unprepared for the self-paced approach frequently adopted in OE. Online students may struggle, furthermore, with the lack of direct and regular contact with their instructor, delayed feedback, or simply becoming 'lost in cyberspace' (Carr, 2000; Gleason, 2004). In addition, students may be unprepared for the time they must devote to their learning (Alexander et al., 2003; Scutter et al., 2011).

With student capabilities upon commencement potentially affecting their success, it is important to understand the skills students bring with them to an online course. A strong case is presented for screening students for basic technical,

organisational, literacy and communication skills, as well as learning styles or dispositions conducive to OE, before accepting them into online courses (Alexander et al., 2003; Chen et al., 2017; Trekles Milligan & Buckenmeyer, 2008). Ensuring students have the necessary skills prior to commencing an online course may give students the best chance of succeeding.

Students may also choose to take a course online for the flexible learning opportunities it affords (Mupinga et al., 2006), yet may not appreciate some additional challenges associated with this flexibility. The apparent convenience of OE may prompt some students to expect OE presents an easier or less time-consuming alternative to on-campus education (Hyllegard et al., 2008; Moody, 2004). Students may elect to take a course online because they are unable to attend on campus, due to work or family commitments (Henry et al., 2014; Ilgaz & Gulbahar, 2015; Tanner et al., 2009); or may be enticed by the thought not having to attend classes will eliminate one demand of their time (Moody, 2004). Indeed some universities, including the case University, promote OE as a suitable alternative for students who cannot attend campus because of other commitments (e.g., Athabasca University, 2016; Charles Sturt University, 2016; Case University, 2016). University study is in itself a substantial commitment, however, regardless of where and when it takes place. Tempted students may underestimate, or may be unprepared for the time and effort required to complete a course online (Alexander et al., 2003; Hyllegard et al., 2008; Packham et al., 2004). Students can actually find OE more demanding and challenging than expected, and may withdraw as a result (Packham et al., 2004). Understanding how students perceive their own skills and availability, and managing associated expectations, therefore, may be especially important to online student outcomes; yet such an understanding remains limited in the OE literature.

### **The total Online Student Experience**

To date, OE research, including many of the aforementioned studies, has focused primarily on the academic product: teaching, learning and curricula; overlooking broader service and support aspects of the OSE. Evaluations of OE have



centred on associated academic outcomes, neglecting consideration of the wider OSE. Institutional support for online students, furthermore, is often reliant on campus-based facilities (Hanover Research, 2012; Oomen-Early & Murphy, 2009), and assumes online students' needs are comparable to on-campus students. As for on-campus education, therefore, a broader view of OE, which encapsulates the total Student Experience, and considers the specific needs of online students, is necessary to facilitate thorough understanding of what may constitute a quality OSE, and how such quality may be enhanced. The present research, therefore, bridges this gap between the HE sector's view of quality, and OE; exploring the full lived experiences of online students, beyond discrete boundaries of academic practices, commensurate with the sectoral shift towards consideration of the total Student Experience.

With OE research to date tending to focus on discrete student characteristics and academic outcomes, furthermore, the scope of understanding is limited (Longden, 2006; Tinto & Pusser, 2006). The literature frequently points to student preparation or suitability for OE as a key driver of a quality OSE (e.g., Case & Davidson, 2011; Osborne, Kriese, Tobey, & Johnson, 2009; Trekles Milligan & Buckenmeyer, 2008); or examines the effectiveness of particular academic tools or strategies on researcher-defined outcomes for particular online courses (e.g., Haas, 2015; Huang, Dedegikas, & Walls, 2011; Rekkedal, 2011). Rarely have researchers looked beyond these discrete aspects, or examined how student and institutional factors might interact to facilitate a quality OSE. The resulting literature is somewhat piecemeal. Each study may reveal one aspect of quality, yet the overall situation remains unclear. Few studies have attempted to look holistically at the OSE, bringing together these pieces to form a clear and detailed understanding of OE. The present research, therefore, seeks to obtain a broader, and deeper, understanding of the OSE, which considers and combines all aspects of the Student Experience, satisfying several gaps in the current literature. These gaps in current understanding of the OSE, to be addressed through the present research, are summarised below.

### **Accommodating student expectations**

Research on online student expectations has typically concentrated on students' suitability for OE, but rarely gives weight to the role of the institution *meeting* students' expectations (Longden, 2006). Given the imperative for universities to attract students in a globalised market, and demonstrate the value of their online courses, coupled with the growing perspective of students-as-consumers, it could be argued universities should prioritise strategies that ensure their courses meet the standards students expect. Universities cannot merely adjust potentially inaccurate student expectations, or simply select students who have accurate expectations. They must also attempt to satisfy demand by adjusting programs to meet students' expectations. This requires a deep and thorough understanding of *what* students might expect from OE, which goes beyond students' own capability or researcher-defined factors; offered by the present research.

### **Beyond the academic experience**

Research to date has tended to concentrate on academic expectations, such as predicted grades and performance in assessment tasks (e.g., Brinkworth et al., 2009; Mupinga et al., 2006; Paechter et al., 2010). Subsequent experiences are often conceptualised in terms of discrete participation or outcome measures directly associated with completing course requirements (e.g., Cavanaugh & Jacquemin, 2015; Parsons-Pollard et al., 2008). Little consideration is given to other, student-centred expectations and experiences, and those associated with the overall experience of being an online student. Few studies, for instance, have investigated students' expectations around time availability, usage and reliance on technology, the ability to cope with unforeseen difficulties, available support, or the degree of interaction with instructors and other students. With many different interests and commitments competing for students' attention, the OSE is likely to be multi-dimensional in nature. A thorough understanding of online students' expectations and experiences, which encapsulates *all* facets of students' lives, however, has not been thoroughly investigated, until now.

### **The missing student perspective**

With prior OE research relying primarily on researcher perspectives, quantitative data, and responses on predefined issues, the online student perspective remains incomplete. Understanding is limited to specific aspects of the OSE assumed to be important. Existing literature has focused largely on assessing specific capabilities defined by the researcher (typically instructors themselves), or has implied inaccurate expectations based on students' reasons for withdrawing (e.g., Gleason, 2004; Hyllegard et al., 2008; Scutter et al., 2011). Prior studies have also relied heavily on quantitative measures, such as grades, published attrition rates and multi-choice surveys (e.g., Cavanaugh & Jacquemin, 2015; DiRienzo & Lilly, 2014). This reliance on predefined or assumed constructs restricts understanding of the OSE. Most notably, students' broader expectations of possible challenges (negative expectations) and non-academic/strictly course-related aspects are rarely considered in depth. With limited student voice, potentially critical factors may be overlooked. Stewart et al. (2004) noted this gap, suggesting it would be valuable to investigate further *what* students' expectations are; yet such an investigation has remained limited, until now. An open, qualitative exploration of students' expectations and subsequent experiences of OE, as described by students themselves, therefore, is essential for universities to have any chance of meeting such expectations, and of ensuring a quality OSE in the eyes of their students.

### **The online first-year experience**

Finally, an exploration of how students transition into OE is needed. The first-year experience presents a critical period in HE. As students transition into university life, they may be faced with unexpected challenges that test their capacity and desire to persist (Krause, 2006; Nelson et al., 2008). Student attrition is also especially significant during this time (Andrew et al., 2008; Tinto & Pusser, 2006), prompting a substantial body of work focused on the important first-year experience in HE (e.g., Kift & Nelson, 2005; Nelson et al., 2008; Tinto & Pusser, 2006). Universities have subsequently spent a great deal of effort establishing targeted

orientation and transition programs to guide and support students through their first year (Clark, 2007).

Few studies, however, have examined the specific first-year experience associated with online HE. This transition period may be even more challenging for online students, who not only need to adapt to the demands of university study, but must also learn how to navigate online systems and manage their own learning (Anderson, 2008; Kikuchi, 2006; Nelson, 2008). Until now, a thorough understanding of the first-year student transition in the context of OE has been unavailable. Instead, the literature relies on adapted understanding of the on-campus first-year experience (e.g., Calder & Menzies, 2011; Cavanaugh & Jacquemin, 2015; Driscoll et al., 2012), or focuses on one or two discrete elements of online student preparation, such as computer literacy or time management (e.g., Decker & Beltran, 2015; Trekles Milligan & Buckenmeyer, 2008; Yu & Richardson, 2015). Given potential differences between online and on-campus Student Experiences, and the breadth of potential influences on online student outcomes, this leaves a substantial gap in current understanding. Investigation of how online students experience the first-year transition period, which goes beyond mere student capability, and looks explicitly at the transition to OE, therefore, is needed.

### **The present research**

The above sections have discussed and critiqued current understanding OE, presenting the theoretical and empirical context for the present research. Gaps in OE literature have been highlighted, illustrating opportunities posed by the present research to enhance understanding of a quality OSE. Online student outcomes remain contested, with several factors potentially confounding comparative studies. There is also limited empirical evidence of online students' expectations, and the role these may play in online student experiences and outcomes. In addition, prior research has failed to identify precisely which aspects of the OSE may contribute to student outcomes. In essence, current understanding lacks sufficient appreciation of: the broader OSE, beyond completion of the online course itself; the detailed *student*

perspective, elicited through qualitative research; *what* students might expect of OE; the role institutions or instructors may play in *meeting* student expectations and facilitating a quality OSE; and the critical first-year transition into OE. The present research seeks to address these gaps, facilitating a deeper understanding of the first-year OSE, which is unconstrained by researcher or instructor perspectives, and considers the full lived experiences of online students, beyond discrete boundaries of course design or student capability.

To account for the limitations of previous research, the present research investigated student perceptions, unrestricted by preconceived views on online student outcomes. Consideration was given to broader experiences associated with OE and potential inconsistencies, both between online and on-campus courses, and among different OE models. The present research offers a detailed account of the OSE, as it occurred across several units, courses and disciplines at the case University. The breadth of description provided by the present research enables the reader to appreciate the potential roles of students' suitability, as well as specific course design, pedagogy and institutional support, in online student outcomes and perceptions of quality.

The present research generates a thorough understanding of OE as it is experienced by students themselves, which until now has been limited. Through its open exploration of students' thoughts prior to commencing OE, the findings provide new insights into the expectations of commencing online students. The investigation of subsequent experiences and the perceived role of these experiences in participants' outcomes offers a new, student-centred perspective of the OSE, and articulates the role of student experiences in online student outcomes. In doing so, the present research applies and extends theory surrounding the influence of consumer expectations, and adapts contemporary perspectives of the total Student Experience, to the realm of online HE; examining connections between online students' expectations, experiences and outcomes, from a detailed, student perspective. The present research clarifies the possibility of strong online student

outcomes, furthermore, and presents the breadth of expectations and experiences that may inform students' perceptions of a quality OSE.

The rich description of the OSE elicited through the present research enables generation of propositions about students' expectations and experiences of OE, and identifies factors that may contribute to online students' learning, academic performance, satisfaction and retention. The findings consider, merge and extend CLT, ECT and Kember's Longitudinal-process Model of Drop-out from Distance Education (1989); offering empirical, qualitative evidence to clarify how these theories may apply to OE, and how associated outcomes may combine to form a quality OSE.

Through a deep understanding of online students' expectations, experiences and outcomes, the present research contributes new knowledge that will inform development of theory, policy and practice. It enables enhancement of the OSE through consideration of online students' lived experiences, and the role their expectations, experiences and outcomes may play in facilitating a quality OSE. These findings will subsequently guide identification and management of risk factors associated with online student outcomes, thereby facilitating improvements to the OSE, contributing to enhanced institutional and course quality.

The literature discussed in this chapter provides the empirical and theoretical context for the present research. The next chapter describes the research methodology, including participant recruitment, data collection and data analysis procedures. The Chapter discusses qualitative inquiry, descriptive phenomenology and case study methodology, and presents the rationale for adopting these strategies, with an explanation of the in-depth online interview data collection procedures and thematic analysis techniques undertaken. Ethical and quality considerations of the present research are also discussed.

It is acknowledged the completion of a literature review prior to data collection may be somewhat contentious in phenomenology and thematic analysis epistemology (Braun & Clarke, 2006). Care was taken, therefore, to ensure this

review did not limit data collection and analysis to particular factors proposed by prior research. A review of the literature instead enabled the researcher to ensure data collection and analysis methods were sufficiently unconstrained to capture all potential aspects of the OSE.

## CHAPTER 3: Research Methodology

Having considered the empirical and theoretical research context, this chapter presents the methodology applied to the present research, incorporating the underlying conceptual framework and associated data collection and analysis procedures. The chapter begins by restating the aim and research questions underpinning the present research, and presents the rationale for phenomenology, qualitative inquiry and case study methodology, as appropriate strategies to investigate the phenomenon of the OSE. Driven by the selected methodology and identified research questions, applicable data collection and analysis methods are then discussed, with a rationale for the chosen research methods presented. Finally, a detailed explanation of how these methods were applied to answer the research questions, and how the scientific rigor of the resultant findings was ensured, is provided, and further ethical considerations discussed.

### Research aim and questions

The aim of the present research was to investigate the phenomenon of the OSE. That is, to describe how first year university students construct their lived experiences of OE, and attribute meaning to these experiences. It sought to extend current understanding of OE through an exploration of the lived experiences of online students, and the connections between online students' expectations, experiences and outcomes, in the context of their first year of study at an Australian public university. Primarily, the present research sought to answer the question:

1. *What is the lived experience of OE, in the context of the first year of study at an Australian public university?*

Supplementing this, two further research questions were investigated:

2. *What are students' expectations of OE; and how do these expectations inform students' construction of, and attribution of meaning to their lived experiences of OE?*



3. *How do students' lived experiences of OE inform the perceived quality of their OSE, with regard to their learning, academic performance, satisfaction and retention outcomes, during their first year of study?*

## **Methodology**

The methodological framework, through which the above research questions were interpreted and investigated, informed the research findings and determines their application to the real world (Willig, 2008). A quantitative and positivist framework to investigate the lived experience of OE, for instance, would drive and facilitate very different results to that of a qualitative, interpretivist philosophy (Findlay, Ballinger, & Hoboken, 2006). Guided by the fundamental aim of the research, and informed by the researcher's worldview, the methodology provides the conceptual framework and philosophical underpinnings of the present research, which drove the selection of appropriate data collection and analysis methods, and interpretation of findings. The following section describes the conceptual framework behind the present research, providing an overview of the chosen research methodology, which includes descriptive phenomenology, qualitative inquiry and case study research, and the rationale for their application.

### **Philosophical underpinnings**

Debate has raged for centuries over the notion of truth and knowledge creation, with no universally accepted paradigm. One consistency across all perspectives, nonetheless, is the recognition that regardless of which epistemology and ontology a researcher subscribes to, the way they view the world and the creation of knowledge fundamentally influences how they conduct and interpret research (Findlay et al., 2006). It is important, therefore, to explain the philosophical underpinnings of the present research.

The researcher was motivated to pursue the present research following her own experiences working and learning in HE. With many years of experience managing student retention and orientation programs, the researcher observed

widespread concerns with online student attrition, alongside limited empirical understanding of what may remedy high online attrition rates. The researcher had also completed a small number of online units herself, and had worked as an online tutor, giving her a personal understanding of both student and instructor challenges in the online HE environment. These experiences formed the researcher's personal worldview, which informed the philosophical underpinnings for the present research. Effort was taken, nonetheless, to avoid the researcher's personal experience biasing the research design or findings (see *Research conformability*, page 104).

The present research was conducted within an interpretivist philosophy. In contrast to positivist epistemology, the interpretivist stance considers multiple meanings and interpretations, rather than searching for one 'truth' (Denzin & Lincoln, 1994; Findlay et al., 2006). One's experiences and perspectives are socially, culturally, historically and linguistically determined (Findlay et al., 2006). The interpretivist perspective suggests there is no one expectation, experience or outcome for all online students. Instead, the interpretivist sees the OSE as unique to each student, with multiple factors influencing how a student defines their experience of OE.

The present research also rests in the centre of the realist-relativist continuum, adopting a critical-realist perspective. The critical-realist believes meaning is fluid, with participants' stories illustrating their subjective perceptions, rather than suggesting cause-effect relationships between structures (realist), or presenting meaning as individual subjective interpretations (relativist; Denzin & Lincoln, 1994; Findlay et al., 2006). The critical-realist worldview considers the OSE as largely subjective, with participants' stories facilitating a deeper understanding of what students might expect and experience of OE.

An interpretivist, critical-realist philosophy implies research can never be fully objective, with the researcher fundamentally connected to resultant findings (Findlay et al., 2006). It is essential, therefore, the researcher's role be acknowledged and managed. In the present research, the researcher took the role of witness; seeking to observe and describe the OSE, rather than to direct and determine that experience

(Findlay et al., 2006). In order to maintain the integrity of research findings, and to minimise potential influence on the phenomenon under investigation, the researcher employed critical self-reflection methods, which identified and recorded her thoughts and actions throughout the research process. This allowed the researcher to critically review and actively remove potential bias from data collection and analysis.

### **Qualitative inquiry**

Perhaps the most fundamental of methodological considerations surrounds the application of quantitative versus qualitative research methodology. With a positivist, rationalistic paradigm at heart, quantitative research is often held in high regard; as an objective and, therefore, reliable and scientific methodology (Guba & Lincoln, 1982). Through impartial investigation under controlled conditions, quantitative research enables the researcher to test theory, to identify and prove what is true or false. Qualitative research, on the other hand, inherently operates in an environment free of manipulation. With the researcher as the principal data collector in qualitative inquiry, findings may be unavoidably dependent on researcher interpretation (Guba & Lincoln, 1982; Patton, 1999).

Qualitative inquiry may not offer the clear cut certainty of quantitative research, yet it plays an important role in generating knowledge and establishing meaning (Patton, 1999). Unconstrained by predetermined categories of analysis, qualitative methodology offers a deep and detailed picture of a phenomenon (Patton, 1990). Where quantitative research may seek to test what is true or false, qualitative research seeks to describe and explain the problem at hand (Willig, 2008). The development of meaningful hypotheses, which might be tested in quantitative research, relies on having some evidence to suggest something *might* be true, and some rationale as to why this might be. Qualitative research offers a richness of information that drives creation of such hypotheses; forming a crucial step in understanding a phenomenon, which then enables the generation, testing, interpretation and application of associated theory (Creswell, 2013). Through open exploration of the issue at hand, unconfined by what the researcher may anticipate as cause or effect, qualitative inquiry enables the researcher to obtain a detailed account

of a phenomenon. One may then begin to formulate suppositions and propose meaningful hypotheses for the phenomenon, based on this understanding.

Consistent with qualitative inquiry, the underlying objective of the present research was to explore and describe the OSE. With several unanswered questions about OE, and conflicting evidence for associated outcomes, existing theory was insufficient to explain this phenomenon. In a review of the first-year experience between 1994 and 2004, Krause, Hartley, James, and McInnis (2005, p. 90) explicitly highlight the need for “qualitative data ... particularly in the context of the increasing imperative to understand the experiences, needs and expectations” of the diverse student body. The present research contributes to addressing this need through qualitative inquiry into the phenomenon of the OSE, as it was experienced by first-year university students. It would have been premature to attempt quantitative investigation, which might have sought to determine cause and effect, or to manipulate the setting to predict a particular outcome (Creswell, 2014; Patton, 1990). In contrast, qualitative inquiry provided a means to uncover how students made sense of their OSE through an exploration of their lived experiences, structured around participant-defined meaning, rather than researcher preconceptions (Willig, 2008). Qualitative inquiry allowed for an open, deep and detailed exploration of online students’ expectations, experiences and outcomes. It did not limit the research to predetermined variables that either supported or rejected discrete preconceived hypotheses (Patton, 1990). Given the gaps in existing understanding of the OSE, taking an unrestricted approach, which allowed the subjects of analysis themselves (students) to describe their understanding of the roles and importance of particular variables, facilitated a more thorough understanding of this phenomenon (Creswell, 2014). The present research, therefore, sought to describe in detail students’ lived experiences of OE through qualitative inquiry, which facilitated a multifaceted, holistic depiction of this phenomenon.

Both qualitative and quantitative approaches play an important role in generating knowledge. Qualitative inquiry may be particularly valuable in establishing greater understanding of phenomena, which enables the generation of

associated hypotheses. Quantitative methods, however, enable such hypotheses to be tested and clarified for a broader population. For this reason, mixed methods, a combination of qualitative and quantitative methods, is often considered a more thorough approach to research (Creswell, 2014). Ideally, the qualitative findings of the present research would be used to inform further investigation of the OSE through quantitative research methods, enabling propositions from the present research to be statistically verified and refined. Mixed methods research, nonetheless, is inherently time-consuming, requiring the collection and analysis of both quantitative and qualitative data (Creswell, 2014). As such, the depth and breadth of qualitative analysis undertaken for the present research meant the addition of quantitative data and analysis was not practical within the scope and timeframe of the present research, determined by the conditions associated with completing a PhD. The researcher acknowledges, nonetheless, the importance of further quantitative investigation of the present research findings; and the reader is cautioned against inferring generalisation of the present research propositions in the absence of such analysis.

### **Phenomenology**

One qualitative methodology consistent with an interpretivist, critical-realist philosophy, and applicable to the present research aim, is phenomenology. Phenomenology seeks to describe participants' experiences through their subjective interpretation of a given phenomenon (Karlsson, 1993). The present research sought to understand the phenomenon of the OSE, as it was experienced by first-year university students. As existing research had not investigated the specific expectations or experiences of students engaged in OE, a phenomenological approach was selected to elicit the lived experience of OE directly from students involved, placing aside any preconceived assumptions of what the researcher may see as potential strengths or limitations of OE. Phenomenology is introduced below, with a rationale for the application of descriptive phenomenological methodology to the present research.

### ***Phenomenology as a research methodology***

Phenomenology, or Empirical Phenomenological Psychological methodology, is the study of phenomena through an exploration of individuals' 'lived experiences' (Karlsson, 1993). It seeks to uncover and describe the experiences of people in relation to a given object or construct, with clarity and authenticity (Barnacle, 2001). Specifically, phenomenology involves the analysis and synthesis of individuals' subjective meanings associated with an experience, within a particular context, allowing only that which is directly presented during the data collection process to be considered.

Creswell (2013) suggests phenomenology is an appropriate research methodology when seeking to describe the 'essence' of a phenomenon (Kleiman, 2004). Phenomenology aims to provide the reader with a better understanding of what it is like for someone to experience the phenomenon. Where grounded theory may seek to construct a theoretical model to explain a phenomenon from the researcher's interpretation of qualitative data, phenomenology purely describes what participants have in common as they experience a phenomenon (Creswell, 2013; Harris, 2015).

The aim of the present research was to describe how first year university students constructed their lived experiences of OE, and attributed meaning to these experiences. The aim was not to develop a theory to explain the OSE, nor determine what makes OE effective, which may have warranted the application of grounded theory, or other such methodology (Creswell, 2013). Instead, it sought to provide a deeper understanding of the lived experiences of online students, and the perceived connections between their expectations, experiences and outcomes. With its capacity to elicit a detailed description of the phenomenon, as it was experienced in its natural setting (Chamberlain, 2009), phenomenology was selected as the most appropriate methodology for the present research. Phenomenology provided a detailed explanation of what participants experienced as OE, the *essence* of the OSE, and the different contexts in which it was experienced.

### ***Descriptive phenomenology***

Two broad techniques are employed in phenomenology: descriptive (Husserlian) phenomenology, and interpretive (or Hermeneutic, Heideggerian) phenomenology. The present research was conducted within the frame of *descriptive* phenomenology. Descriptive phenomenology, which follows the work of Edmund Husserl, seeks to describe a given phenomenon as it is experienced by individuals within the world they live in (Chamberlain, 2009). Husserl proposed phenomena could not be separated from the experience of that phenomenon, nor from the individual experiencing it (Barnacle, 2001; Chamberlain, 2009). An object does not exist to itself, therefore, but rather it is brought into existence through its relationship to others. Husserl believed one could only ever come to understand *aspects* of objects, but never learn their entire or actual truth (Barnacle, 2001).

Heidegger, a student of Husserl, sought to extend phenomenological methodology through a greater focus on how individuals understand phenomena (Chamberlain, 2009), and investigated the role of language in determining the meaning of objects (Barnacle, 2001). Heidegger referred to this approach as phenomenological hermeneutics, also known as interpretive phenomenology (Barnacle, 2001). In contrast to Husserl's descriptive phenomenology, interpretive phenomenology aims to provide insight into the meaning(s) associated with a given phenomenon, and to uncover any hidden meaning of the phenomenon under study, rather than to describe it (Kleiman, 2004; Priest, 2004).

Descriptive phenomenology is especially differentiated from interpretive phenomenology by the technique of phenomenological reduction, or 'bracketing' (Kleiman, 2004; Priest, 2004). Bracketing involves the researcher consciously removing his or her pre-existing personal experiences, preconceptions, biases, presuppositions, beliefs and attitudes from the analysis, in order to view the phenomenon in a clear and unaltered manner (Priest, 2004). In contrast, interpretive phenomenology requires the researcher to acknowledge these subjective qualities and their influence on the development of his/her understanding of the phenomenon under study (Priest, 2004). Consistent with descriptive phenomenology, the

researcher kept detailed notes throughout the data collection and analysis process, which facilitated bracketing of subjective interpretations. Removing the potential influence of researcher pre-conceptions and existing theory enabled development of a thorough understanding of the OSE, from the student perspective, which provided a sound basis for generating novel propositions about first-year online university students' expectations, experiences and outcomes, and associated conceptualisations of a quality OSE.

### **Case study research**

The present research involved a single holistic embedded case study of students at one university, who were undertaking their first year of study in an online course. Yin (2003, p. 13) defines the case study as “an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident”. Yin highlights the characteristics of case studies in coping with complex data, relying on multiple sources of evidence and using theoretical propositions to guide data collection and analysis. A good case study incorporates an idiographic perspective, attention to contextual data, triangulation, temporal elements and formulation or refinement of theory (Willig, 2008). A case study enables the researcher to gain a holistic, balanced and dynamic view of the phenomenon and its' context (Dooley, 2002; Noor, 2008). Distinguishing features of case studies include in-depth, sharply focused exploration of a particular phenomenon, or unit of analysis, using a variety of data sources (Baxter & Jack, 2008; Willig, 2008). Consistent with these definitions, the present research explored the phenomenon of the OSE through the direct analysis of real-life student accounts, with multiple embedded subcases (online students) investigated at three points during their first year of study (source triangulation). This strategy allowed for an in-depth and focused investigation of the OSE. An explanation of why the present research warranted the application of case study methodology, and how the case was conceptualised, is provided below.



### *Case study as a research strategy*

Yin (2003) proposes three criteria for selecting case study as a research strategy: the use of exploratory (*what*) and explanatory (*how*) research questions; a lack of researcher-control over the phenomenon under study; and a contemporary (as opposed to historical) focus. The present research questions could be described as ‘what’ or ‘how’ questions, reflecting an exploratory and explanatory research focus. In addition, though some researcher influence on data collection and interpretation cannot be avoided, the intention of the present research was to investigate the phenomenon of the OSE as objectively as possible, and all efforts were made not to affect participants’ experiences of OE. Finally, the present research focused on a phenomenon existing in the present, providing an opportunity to collect data in its natural setting. The exploratory and explanatory nature of the research questions, together with the lack of researcher influence over the experience of OE, and the contemporary nature of the present research, therefore, warranted the use of a case study research strategy.

Eisenhardt (1989) also suggests case studies are particularly appropriate when little is known about a phenomenon, or when what is known has little empirical support. As discussed in Chapter Two, the field of OE is still evolving, with little currently known about the expectations of online students, and only limited research into online students’ experiences during their first-year of study. Moreover, potential connections between online student expectations, experiences and outcomes, and how these may inform students’ perceptions of quality, have yet to be comprehensively investigated. These gaps in current knowledge further support the use of case study methodology in the present research.

### *Case study type*

The present research could be classified as an *instrumental* case study (Stake, 1995). The case was selected as an exemplar of the OSE phenomenon, which provided insights that may help to refine theory and facilitate greater understanding (Baxter & Jack, 2008; Willig, 2008). The present research explored how this phenomenon existed within the particular context of the first year of study at one

Australian public university. The case study had a descriptive focus (Yin, 2003), with the aim of developing a detailed account and understanding of the OSE phenomenon within this context (Baxter & Jack, 2008; Willig, 2008). While the present research did not seek to generate theory, the findings offer new insights, propositions and interpretations (Willig, 2008), which will inform and help to refine existing theory. As is the nature of case study research, findings from the present research cannot be generalised to unexplored cases in any direct sense, but give rise to explanations that could potentially apply to other cases and, as such, may be *transferable* to similar contexts (Dooley, 2002; Willig, 2008). Additional cases must, nonetheless, be further investigated in future research, to assess the generalisability of the present research findings (Dooley, 2002).

## **Research methods**

The aforementioned methodology and research aims informed the selection of appropriate data collection and analysis methods (Findlay et al., 2006). A multi-choice questionnaire may be appropriate when applying a quantitative positivist framework, for instance, while semi-structured interviews may be more appropriate under a qualitative phenomenological framework. In light of the exploratory aim and research questions, and consistent with phenomenology and qualitative inquiry methodologies, in-depth online chat-style (synchronous text-based) interviews were selected as effective means to capture participants' lived experiences of OE. Participants' responses were then explored and described through a process of thematic analysis and data visualisation. The following section describes the case characteristics and the specific data collection and analysis methods applied in the present research, together with the rationale for their application.

### **The case and research participants**

The case University was selected primarily as a convenience sample. It was also an appropriate real-world exemplar of online HE, given the University's large

and diverse offering of online courses. A full description of the case University, its offerings and student body is provided in Appendix A.

Participants of the present research were students enrolled in the first year of study at the case University, with their course expected to be delivered entirely online. Specifically, the present research included students enrolled in Bachelor degrees that required students to interact with instructors and course materials via the internet, with no requirement to attend a University campus. Students in online Graduate Certificate and Diploma courses were also included, where they were commencing their first year of university in that field of study, as this was considered comparable to the first year in a Bachelor degree program.

To ensure a thorough and meaningful exploration of this phenomenon, within the applicable time constraints, higher degree and non-first-year students were excluded from the present research. Such students were likely to possess greater experience and skills as a result of prior university study, which could place them at a greater advantage in OE (Artino & Stephens, 2009). Online students not enrolled domestically were also excluded for practical reasons. The researcher acknowledges, nonetheless, these are important cohorts who would benefit from future research.

### ***Participant selection***

Prospective participants were purposefully approached to facilitate representation of typical OE situations. Strategic selection enabled collection of rich and comprehensive data, from which the researcher could generate a detailed description of the OSE at the case University. Where random selection may have been appropriate, or preferable, in quantitative studies seeking to confirm existing theory; to use such a technique in the present research may have prevented less common, yet meaningful data from emerging (Eisenhardt, 1989). Strategic selection of cases likely to replicate, or extend emergent understanding or explanations allowed the researcher to continually examine and adjust data collection to ensure any generated propositions could consistently describe the expectations and experiences of online first-year students at the case University.

For findings to be meaningful and comprehensive, particular characteristics of the case University online student population were considered in participant selection. In particular, it was important to interview students enrolled both full-time and part-time, as fundamental differences may exist between these cohorts (Moro-Egido & Panades, 2010). Participants from a broad range of courses were also sought, to facilitate a comprehensive perspective of the OSE across the University. While no eligible participant who expressed interest was refused participation, particular student cohorts were targeted through recruitment strategies that addressed particular criteria missing from the recruited sample (e.g., students in a particular faculty), following the first round of interviews with interested participants.

### ***The research sample***

Forty-three online first-year university students participated in the present research. Table 1 and Table 2 summarise the characteristics of the final research sample, based on participants' self-reported demographic and enrolment information. The sample approximately mirrored the overall case University student population, with 67 per cent of participants female, just over two thirds enrolled in Bachelor degrees, and a small number enrolled in Graduate Certificates or Diplomas (Case University, 2012). A sizeable proportion of participants were studying part-time (58%) and were non school-leavers (aged 21 years or older; 93%). A more mature sample, and a frequent take-up of online courses on a part-time basis, is consistent with existing literature on online student demographics (Driscoll et al., 2012; Hyllegard et al., 2008; Xu & Jaggars, 2011). In addition, more than half of participants were enrolled in health courses (psychology, social sciences, social work, nursing or public health; 53%), likely reflecting the availability of online courses, and/or places in these programs. While many participants had some experience of university study (in a different field), the majority were studying online for the first time (60%), and described themselves as reasonably proficient with technology (92%).

*Table 1: Participant Demographics*

	Number (percentage) of Participants
Gender	
- Male	14 (33%)
- Female	29 (67%)
Age	
- School leaver	1 (2%)
- 21 years or older	40 (93%)
- Non-disclosed	2 (5%)
Technical experience (self-reported)	
- Highly experienced with technology and OE	7 (16%)
- Experienced with technology, with some OE	10 (23%)
- Proficient with technology	23 (53%)
- Borderline proficient with technology	2 (5%)
- Inexperienced with technology	1 (2%)

*Note:* Technical experience ratings were self-reported and considered both computer literacy and OE experience.

Table 2: Participant Enrolment

	Number (percentage) of Participants
Study load	
- Full-time (enrolled in at least three units/semester)	18 (42%)
- Part-time (enrolled in less than less than three units/semester)	25 (58%)
Course level	
- Bachelor Degree	33 (77%)
- Graduate Certificate	6 (14%)
- Graduate Diploma	4 (9%)
Field of study (majors)	
- Health (psychology, social sciences, social work, nursing, public health)	23 (53%)
- Business (management, human resources, occupational health and safety)	13 (30%)
- Law	3 (7%)
- Technology (computer science, security, technology)	4 (9%)
- Other (planning, writing)	2 (5%)

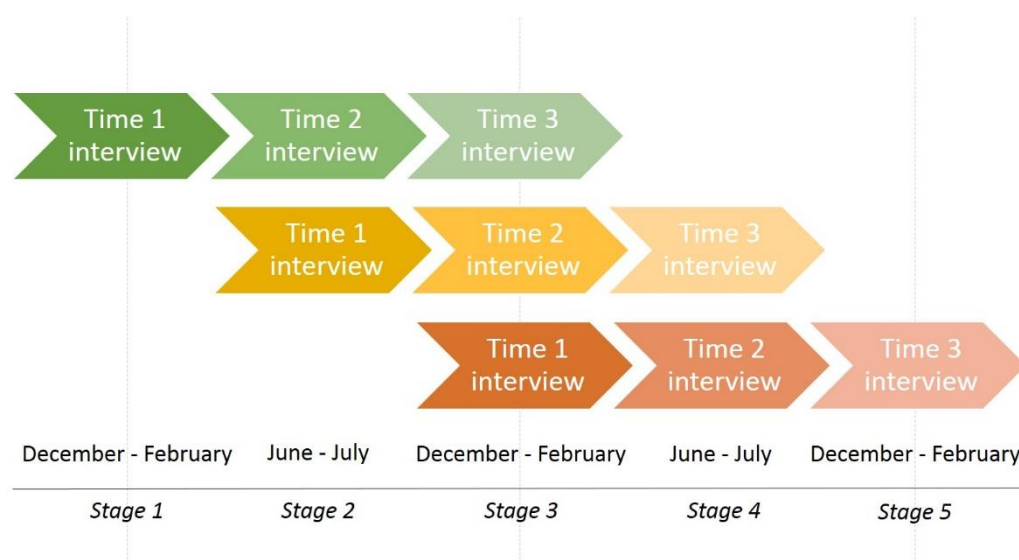
*Note:* Some participants were enrolled in more than one field of study.

Case study research requires that data collection continue to the point of saturation, until no new or unusual information is found (Dooley, 2002; Eisenhardt, 1989). The amount of data collected must also be considered in terms of the available timeframe and complexity of the phenomenon being described. The longitudinal nature of the research and associated participation attrition over time (due to course attrition and/or withdrawal of research participation), together with the need to sample a broad range of first-year online students, informed the number of participants interviewed for the present research. In total, 43 participants were recruited, with the final data set comprising 99 separate interviews.

### *Participant recruitment procedures*

With authorisation from relevant University personnel, participants were recruited through the online Student Portal, and directly via online Course Coordinators. An Information Statement, outlining what was involved in participation (see Appendix B) was provided to all who expressed an interest in participation. Following receipt of an electronically signed Consent Form (see Appendix C), the researcher contacted participants to schedule interviews at mutually convenient times. This included some interviews outside of business hours and on weekends.

Initial recruitment occurred over three semesters (stage 1, 2 and 3 cohorts), with participants interviewed before/upon commencing (Time 1), and again after one (Time 2) and two (Time 3) semesters in their course, as illustrated in Figure 4. Participants were asked at the end of their first and second interviews if they would be willing to be contacted again the following semester for the next interview. Subsequent interviews were then arranged once the second and third consent forms were received, confirming participants' consent to continue participation. Second and third interviews were only conducted with participants who had completed preceding interviews.



*Figure 4.* Scheduling of Time 1, 2 and 3 interviews across three participant cohorts (5 interview stages over two years).

Given the short timeline between application, acceptance and commencement of study, it was difficult to contact, invite and interview all participants prior to the start of their first semester (Time 1). While students who had been accepted into an online course could access the invitation to participate prior to commencing, and were invited to participate in an online interview during the University's orientation period, many students did not respond to the invitation or submit their consent forms until later. As a result, some participants could not be interviewed until after they had officially commenced. The researcher subsequently set each interview cut-off dates as the third week of semester, with no participants interviewed after this point.

## **Variables**

The unit of analysis in the present case study was the phenomenon of the OSE. Specifically, the present research sought to investigate three variables: online first-year university students' self-reported *expectations*, *experiences*, and *outcomes*. Each of these variables is described in more detail below.

### ***Online student expectations***

The present research investigated the expectations of first-year students upon commencing an online course at the case University. It sought to describe, in a comprehensive and unconstrained way, what students anticipated their OSE would be like, including their hopes and anticipated challenges or concerns. Students' expectations were revisited after one semester and one year in their online course, to ascertain how these expectations had changed, and/or been challenged/clarified by their experiences of OE. Student expectations were the primary variable of interest in answering the second research question: *what are first-year university students' expectations of OE, and how do these expectations inform students' construction of, and attribution of meaning to their lived experiences of OE?*

### ***Online student experiences***

Students' experiences of OE were investigated following commencement in their online course. The present research sought to describe the lived experience of



OE, including an exploration of what participating in their online courses involved, as well as students' broader experiences of being an online student. Experiences were investigated across students' first year in their online course to ascertain how students' experiences evolved as a result of their increasing familiarity with OE. Online student experiences were the variable of interest in answering the primary research question: *what is the lived experience of OE, in the context of the first year of study at an Australian public university*; and informed answers to the second and third research questions: *what are first-year university students' expectations of OE, and how do these expectations inform students' construction of, and attribution of meaning to their lived experiences of OE*; and *how do students' lived experiences of OE inform the perceived quality of their OSE, with regard to their learning, academic performance, satisfaction and retention outcomes, during their first year of study?*

### ***Online student outcomes***

Following their first and second semesters, online students' outcomes were investigated. The specific outcomes explored were: the extent and quality of *learning* perceived to have occurred; *academic performance* (how students felt they performed in their course); students' *satisfaction* with the OSE; and student *retention* (reported intentions to continue, or withdraw from their course). Online student outcomes were the primary variable of interest in answering the third research question: *how do students' lived experiences of OE inform the perceived quality of their OSE, with regard to their learning, academic performance, satisfaction and retention outcomes, during their first year of study?*

### ***Self-reported outcomes***

As the focus of the present research centred on the *student* experience, official outcomes, such as academic status and grades, determined and reported by the institution, were not included. It is acknowledged, nonetheless, these are also important measures of OE quality.

Students typically seek a university qualification for the purpose of gaining, or developing their vocational and employment opportunities in a given field (Lopez-Bonilla et al., 2012). A key indicator for the value of OE, therefore, would be its capacity to assist students to attain increased knowledge and skills, as defined by a set of learning outcomes for that course. Where students do not feel they have achieved these learning outcomes, OE may be perceived as ineffectual. For institutions, this concept is epitomised in a system of distinct assessment tasks, objective grading and detailed core requirements, which, upon reaching a given level of achievement, warrant students to graduate with a qualification. From a student perspective, however, the concept of a successful endeavour at university may be defined by other, less clear-cut and subjective measures; such as a greater understanding of particular subject matter, the attainment of new skills, or the capacity to obtain a better job (Lopez-Bonilla et al., 2012).

While actual performance and grades, determined by the institution, may be of importance to OE quality, the present research focused specifically on the *student* experience. Results on assessment tasks, by their very purpose, should shape students' perceptions of their own learning, acting as points of feedback to direct future learning. Students can, nonetheless, hold inaccurate perceptions of their own learning and abilities (Grant et al., 2009). It is their *interpretation* of these results (accurate, or not), therefore, which determine students' experiences of learning. Self-reporting students' results also allows students the opportunity to reflect on their progress and "to place themselves at the centre of the learning experience" (Darrow et al., 2002, p. 8). This enables students to become more aware of their strengths and weaknesses, through describing their own progress. Concurrently, this description provides valuable information about the perceived effectiveness, engagement and value of the teaching methods employed, as well as students' own perceived learning. It was students' *perceptions* of their achievement of outcomes consequently, potentially upon reflecting on institutionally defined results, which were taken to illustrate their subjective experiences, and perceived quality of their OSE.

## **Data collection**

The aforementioned variables were investigated through in-depth online interviews at three time points: before/upon commencing; one semester after commencing; and one year after commencing an online course. The rationale for selection of online and in-depth interviews as suitable data collection techniques for the present research is provided below. Development of associated interview schedules is also discussed.

### ***In-depth interviews***

Liamputtong and Ezzy (2005) identify advantages of in-depth interviewing in allowing for an exploration and novel understanding of participants' subjective meanings and interpretations. In-depth interviews enable investigation of the social environment in which participants construct these meanings and interpretations, while ensuring any potentially socially sensitive responses are less influenced by the presence of peers. Interviews provide the opportunity for participants to tell their story in their own way. Interviews can also present a rewarding experience for both researchers and participants (Liamputtong & Ezzy, 2005). Interviewing can, however, demand substantial time and resources, due to the nature of data collection and complex data analysis (Liamputtong & Ezzy, 2005). These limitations, therefore, were taken into consideration in determining the amount of data to be collected, and ensuring the present research was completed within the applicable timeframe.

### ***Online interviewing***

Online interviewing was selected for its advantages in enabling the researcher to explore participants' experiences in their natural setting, and the capacity to accommodate participants who were unable to conveniently meet in person, such as those living interstate (Hiskey & Troop, 2002; Im & Chee, 2006). While there are many methods that could be employed in online research, including surveys, email, synchronous chat and asynchronous discussion forums, the immediate interaction between researcher and participant in a synchronous chat environment was chosen as most effective in developing participant rapport, enabling the collection of rich

qualitative data (Seymour, 2001). Online interviewing also encouraged sensitive or vulnerable participants to participate and discuss their experiences honestly, such as those who felt they did not have a pleasant OSE; due to the pseudo-anonymity associated with online communication (Fox et al., 2007; Gruber, Szmigin, Reppel, & Voss, 2008). In addition, conducting online synchronous chat interviews allowed for simultaneous participation and transcription of what was discussed, offering a significant timesaving benefit to the researcher. The chat tools were also readily available, free of charge to the researcher and participants. It is acknowledged, nonetheless, that this anonymity and reliance on textual communication, could also present as barriers to effective communication and connection for some participants). The researcher was able to manage these limitations, as a result of her experience in online communication and professional training in online (text-based) counselling techniques.

Traditional face-to-face interviews, while valuable, can present challenges for participants in terms of personal organisation, transport to the interview location, and discomfort in meeting with strangers in an unfamiliar location (Fox et al., 2007). The online environment, on the other hand, offered a more convenient, cost-efficient and comfortable option (Fox et al., 2007). Online interviews allowed participants to participate from the location of their choice, and at convenient times (Gruber et al., 2008; Hirt-Marchand, 2005).

Online interviewing has been used successfully in consumer and social research settings. Gruber, Szmigin, Reppel and Voss (2008), for instance, conducted online chat-style interviews with opinion leaders on their thoughts about digital music players. They found traditional interviewing techniques could be successfully applied to the online environment, and enabled them to gather data from participants who would have been difficult to contact otherwise. Participants in Gruber et al.'s study, furthermore, expressed enjoyment of the experience and the relaxed, friendly atmosphere of the online interview.

Online interviews in the present research were initially conducted using the chat tool within the case University's LMS: *Blackboard. Adobe Connect*, an online

meeting program also supported and used widely at the University, was subsequently adopted as a back-up system, in response to technical difficulties. As interviews took place throughout a two-year period, with Blackboard and Adobe Connect packages updated on numerous occasions throughout this time, Blackboard versions 7.0 to 8.1, and Adobe Connect versions 7.0 to 8.0, were used.

### *Safety and security in the online environment*

Although online interviewing is a relatively new research technique, the risks associated with online data collection are no greater than for their traditional counterparts (Kraut et al., 2004). Common concerns surrounding online research include ensuring participant safety and information confidentiality (Kraut et al., 2004; Seymour, 2001). The perceived anonymity in the online environment can also enable people to behave inappropriately or with malicious intent, though this may be more common in settings where several participants are present (e.g., open discussion forums), and less so in a one-on-one interview situation (Kraut et al., 2004). Online research is no more likely to directly cause harm to participants than face-to-face research, however, and may, in some cases, be less harmful, as it may be easier for online research participants to withdraw their participation as soon as they feel any discomfort (Kraut et al., 2004). Care was taken, nonetheless, to carefully monitor conversations for potential participant discomfort, as this can be harder to detect online (Kraut et al., 2004). In particular, the researcher regularly checked with participants after any long pauses or highly personal disclosure and reminded participants they were welcome to stop at any time; however, no participant subsequently reported any discomfort with the interview.

Increased risks to confidentiality in online research can also result from unauthorised access to information through deliberate hacking, or human error (Kraut et al., 2004). These risks were minimised by ensuring continuous and up-to-date computer security (Im & Chee, 2006), including for case University systems and the researcher's computer. Confidentiality of data was maintained through access to the interview environment via unique usernames and passwords (Im & Chee, 2006), and password protection of sensitive documents (Kraut et al., 2004).

Likewise, separating the collection and storage of identifying information from the data itself, with unique codes linking the two, aided in maintaining participant privacy and data confidentiality (Kraut et al., 2004).

#### *Text-based communication*

In the absence of visual cues, misunderstandings can occur in online interviews; particularly in relation to internet jargon, such as abbreviations, acronyms and emoticons (Im & Chee, 2006). The researcher addressed this concern by asking for clarification whenever confusion arose, and encouraged participants to do the same (Im & Chee, 2006). The lack of appearance-related clues, furthermore, served to strengthen development of rapport in situations that may have been less comfortable for participants face-to-face, such as potential discomfort associated with visible age differences between the researcher and participants (Fox et al., 2007). Text-based communication also prevented non-verbal cues from influencing participants' responses (Gruber et al., 2008).

Hidden behind a screen, it was also possible for participants to split their attention between the interview and other tasks, or to become distracted during their online interview (Hirt-Marchand, 2005). Fox, Morris and Rumsey (2007) recommend that effective participation can be maximised by creating an encouraging and friendly atmosphere during the interview, and reassuring participants of their valued contribution to the research. Engaging participants in the interview, and asking for their full attention before the interview commenced, therefore, may have encouraged participants to avoid distractions, yet their undivided attention could not be guaranteed. Such conditions are characteristic of online communication, nonetheless, and provide added insight into the OSE.

#### *Accessing the online interviews*

Following agreement of suitable interview times, participants were sent a confirmation email with detailed instructions on how to access the interview, as well as the researcher's contact details, in case of any difficulties. Examples of these emails are provided in Appendix D. Interviews were conducted electronically

through synchronous chat, in Blackboard initially (stage 1 and 2 interviews). To access Blackboard interviews, participants logged into the University's Blackboard portal using their student login and password, clicked a link to the research site and navigated to the chat section, where the researcher was waiting at the scheduled time.

Following difficulties accessing the Blackboard chat tool, an alternative system, Adobe Connect, was used for later interviews (stages 3, 4 and 5). As for Blackboard, all interviews in Adobe Connect were conducted through synchronous chat. This proved to be more reliable and easier to use, for both the researcher and participants. To access Adobe Connect interviews, participants simply clicked a link from the researcher's confirmation email to enter a dedicated and secure live chat session for that interview.

### *Development of interview schedules*

The open and exploratory nature of data collection allowed for some flexibility in interview structures. An interview schedule was developed for each time point, with a list of exploratory questions designed to prompt participants to discuss all elements of their expectations, experiences and outcomes openly (see Appendix E). Similar questions were incorporated into each interview schedule, to allow for longitudinal comparison of participant expectations and experiences. The precise wording and order of prompts were adjusted to individual participants, in order to elicit as much information as possible (Liamputtong & Ezzy, 2005). Participants were also encouraged to elaborate on any other issues raised as important or relevant. Interview schedules were approved by the case University's Human Research Ethics Committee, prior to commencing data collection.

In developing a broad scope for expectations, experiences and outcomes to be explored, the researcher identified an extensive set of potential elements related to the OSE. These elements were ascertained through investigation of previous OE research, literature on the HE Student Experience more generally, and informed by the researcher's experience working at three Australian universities offering OE.

Each identified topic (potential aspect of the OSE) was used as a prompt to ensure comprehensive exploration of the phenomenon. Effort was taken to ensure the interview discussion was not limited to these topics, however, and the researcher simply used the pre-defined questions as prompts to encourage participants to expand on their lived experiences. Open questions were used throughout the interviews to invite participants to discuss their perspectives freely, and to minimise potential bias associated with researcher suggestion. Closed questions were used sparingly, to confirm participant understanding of the research process, clarify the researcher's understanding of points raised, and to maintain rapport. The researcher then used reflection and paraphrasing to clarify understanding of issues raised by participants throughout the interview.

While no two interviews were identical, every interview adhered to the same interview schedule for that time point, with each participant prompted to discuss the same broad topics. The interviews each began with a recap of the process to be expected, and a discussion of any changes to participants' enrolment. The researcher then invited participants to speak openly about their expectations, experiences and outcomes of OE. Specifically, participants were prompted to discuss their: attendance and participation; course delivery; assessments; interaction with others; technology; time and place of learning engagement; challenges; support needs; and learning, performance, satisfaction and retention outcomes. Participants were also invited to reflect on issues discussed in their previous interviews, though the researcher did not raise specific discussions to avoid restricting conversation to particular issues. In most cases, participants were able to recall and reflect on earlier interviews; however, the researcher reminded participants of earlier comments when requested (by referring to previous interview transcripts). In addition to discussion of schedule topics, participants were encouraged to raise any other aspects of their experience they felt were relevant. Participants were also invited to share any thoughts or feedback about the interview process, to ensure the interview and associated discussion remained credible and relevant to those directly engaged with the phenomenon under investigation.



### ***Procedures during the online interviews***

Upon entering each interview, the researcher welcomed participants, introduced herself, and provided an overview of how the interview would proceed. The researcher reminded participants they were welcome to pause or stop the interview at any time, and encouraged them to let her know if they were unsure or would prefer not to answer any questions. Participants were advised to email or phone the researcher should they experience any difficulties with the chatroom.

Each interview ran for approximately one hour, following the relevant interview schedule, with opportunities for participants to expand on their responses where they felt comfortable. The researcher encouraged participants to elaborate where further information would be helpful in providing a clearer picture of the expectation/experience discussed, or where the participant was unsure of how to respond. Throughout the interviews, the researcher also took detailed notes, documenting any personal thoughts, concerns and impressions arising during the discussion.

### ***Data management procedures***

Interview transcripts were automatically stored securely within the relevant Blackboard/Adobe Connect chatroom. These were subsequently retrieved and stored on the researcher's computer under participant pseudonyms. Transcripts stored electronically within Blackboard were accessible only via authorised username and password, and Adobe Connect discussions were accessed via a unique URL, known only to the researcher and relevant participant. An NVivo 9 (later NVivo 10) project file was created to store and analyse these transcripts. Participant demographics and interview specifics were recorded in NVivo as node classifications, with associated documents (consent forms, researcher notes and interview transcripts) imported and linked to each participant node. Security of these files was ensured through password protection as well as comprehensive anti-virus and anti-spyware protection on the researcher's computer. Encrypted files were also regularly backed up to an external hard drive and cloud-based storage, to protect against unforeseeable damage to the computer. In addition, any hand-written notes made by the researcher during and

following each interview were stored in a locked filing cabinet at the researcher's residence.

### **Data analysis**

Data analysis procedures involved thematic analysis, underpinned by descriptive phenomenological epistemology. The focus of data analysis was to build a detailed description of OE, as it was experienced by interviewed participants. Recognising the complexity of the OSE, the present research sought to make sense of students' multifaceted lived experiences by identifying connections between themes, and describing the perceived role of individual themes in facilitating online student outcomes. As such, the findings extend beyond standard phenomenological descriptions, summarising potential connections between online students' expectations, experiences and outcomes, which help to demonstrate the implications of students' lived experiences. Thematic relationships discussed in this thesis, nonetheless, represent propositions, informed by participants' own explanations; and these findings should not be generalised or taken as verification of such relationships. Rather, further research, with appropriate methodology, is necessary to verify, test and measure the thematic relationships described in the present research.

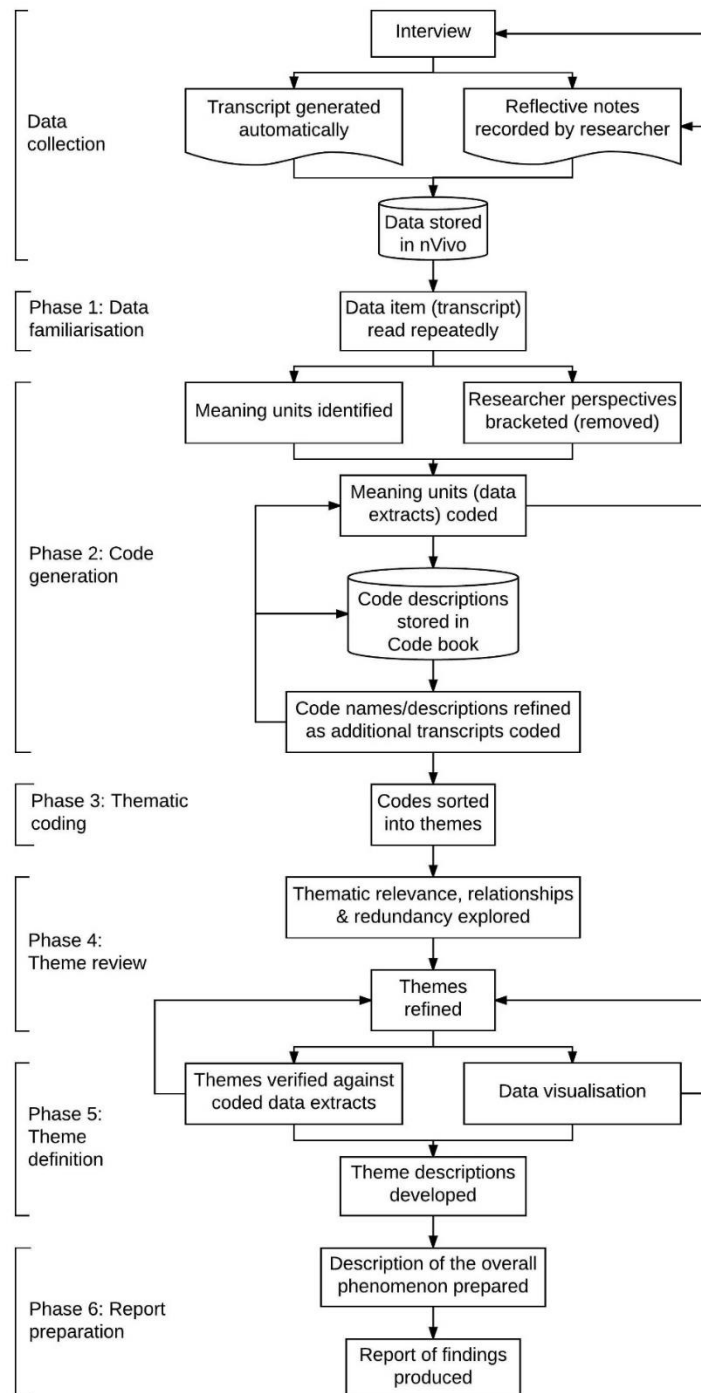
Phenomenological data analysis procedures were adjusted slightly, to suit the time constraints and amount of data collected in the present research, reflecting a variation of pure phenomenological data analysis (Karlsson, 1993; Kleiman, 2004). Specifically, phenomenological data analysis requires comprehensive thematic analysis and description of each data item independently, with subsequent analyses confirmed directly with each participant, prior to the exploration of themes across the data set (Karlsson, 1993; Kleiman, 2004). This step would have been especially time consuming, with discrete analysis potentially required of 99 separate interviews. Separate preliminary analysis was also felt to offer insufficient benefit to counter the risk of potential researcher bias. Individual analysis of early interviews, for instance, may have been influenced by researcher assumptions of what should be important. Subsequent analyses may also have been biased by the completed analyses of previous transcripts. This step, therefore, was excluded from the data analysis

procedures. The core principles of phenomenological analysis were, nonetheless, retained, with data analysis following the basic steps of Braun and Clarke's (2006) thematic analysis, guided by best practice qualitative research methods (Glesne & Peshkin, 1992).

Braun and Clarke (2006, p. 6) describe thematic analysis as “a method for identifying, analysing, and reporting patterns (themes) within data”. Thematic analysis is a valid and effective method of qualitative data analysis, used with a variety of methodologies, and is applicable to a phenomenological framework. Braun and Clarke (2006) argue thematic analysis can be a rigorous data analysis technique, where researchers explicitly describe and justify the decisions made throughout the analysis process. In satisfying this imperative, the following section discusses the steps taken to review and analyse the present research data.

### *Thematic analysis procedures*

Data analysis involved six phases, with some analysis conducted alongside data collection. The richness and breadth of data elicited from 99 separate interviews warranted extensive exploration and reduction of participants' stories, to clarify the essence of the OSE. Figure 5 illustrates each step in the data collection and analysis process, drawing on the thematic analysis techniques proposed by Braun and Clarke (2006), and informed by the qualitative and phenomenological analysis procedures of Glesne and Peshkin (1992), and Karlsson (1993).



*Figure 5.* The data collection and analysis procedures used in the present research, adapted from Glesne and Peshkin (1992), Karlsson (1993), and Braun and Clarke (2006).

### *Data collection*

Each interview was automatically transcribed and recorded by the online chat system. Throughout data collection, the researcher also made notes about her subjective interpretations and thoughts arising while conducting the interviews, in order to later separate out, or bracket, these from the interview data (Karlsson, 1993). Interview transcripts and researcher notes were imported into NVivo after each interview.

### *Data analysis phase 1: Data familiarisation*

In accordance with descriptive phenomenology (Kleiman, 2004), and consistent with Braun and Clarke's (2006) thematic analysis procedures, following each interview the transcript was read in its entirety to get a holistic sense of the interview. Researcher notes were reviewed alongside each corresponding data item to remind the researcher of how the interview progressed, and highlight potential biases. The transcript was reread several times, continuing until the researcher felt she had gained a thorough appreciation of the participant's experience (Braun & Clarke, 2006).

### *Data analysis phase 2: Code generation*

Following data familiarisation, each transcript was read more closely and individual 'meaning units' (Karlsson, 1993), signifying discrete ideas or concepts, were identified (Braun & Clarke, 2006; Kleiman, 2004). Researcher notes were again reviewed alongside interview transcripts, and potential researcher-influenced elements were bracketed from analysis (Karlsson, 1993). For example, where the researcher had noted technical difficulties during an interview, care was taken to bracket (remove) references to such difficulties from the analysis, except where the participant had explicitly stated this experience as reflective of their OSE. Each resultant meaning unit was assigned a coding node in the NVivo file. As additional nodes were created, and further transcripts analysed, node names and compositions were continuously refined in a Code Book (Glesne & Peshkin, 1992). Periodical review of the data also drove adjustment of subsequent interview techniques to better

shape and focus the data to the research aim. Phases one and two continued for each interview transcript, until all data items had been individually coded.

### *Data analysis phase 3: Thematic coding*

Once all data collection ceased, and all transcripts had been coded, the researcher selected and sorted relevant and important meaning units (codes) applicable to the research questions, commencing thematic coding. Meaning units were grouped into clusters of meaning, or semantic themes and sub-themes (Braun & Clarke, 2006), to obtain a clear understanding of the overall phenomenon (Karlsson, 1993). Each theme represented an important aspect of the OSE, and reflected a pattern of meaning within the data set (Braun & Clarke, 2006). Themes were identified based on their prevalence across the participant sample, across the three time points, and/or across the data set; as well as the depth of discussion within each participant's interview, and/or explicit significance ascribed by participants.

### *Data analysis phases 4 and 5: Reviewing and defining themes*

Once a comprehensive collection of themes had been identified, these were subjected to a process of free imaginative variation, to determine which meaning units were most important to the essence of the phenomenon (Chamberlain, 2009; Kleiman, 2004), and connect these back to the specific research questions. Themes and sub-themes were repeatedly reviewed and adjusted to ensure each was meaningfully coherent, yet clearly distinguishable from other (sub) themes (Braun & Clarke, 2006). At this point, the researcher began to elaborate on the findings to describe the essential meaning of the themes. Visualisation of themes and sub-themes commenced, forming thematic structures (Braun & Clarke, 2006), which clarified and articulated the phenomenon of the OSE (Kleiman, 2004). Potential connections between time one expectations, time two/three experiences, and outcomes were explored, taking care to separate out any researcher assumptions or influences. Following articulation of essential meanings and thematic structures of the phenomenon, the researcher conducted a conformability audit (Guba & Lincoln, 1982), returning to raw data extracts to validate the analysis (Braun & Clarke, 2006; Kleiman, 2004).

### *Data analysis phase 6: Report preparation*

Once a clear structure of the phenomenon of the OSE was established, a rich thematic description of the data set was prepared (Braun & Clarke, 2006).

Visualisation of major themes (thematic structures) was used to guide the preparation, refinement and articulation of the research findings (Glesne & Peshkin, 1992), presented in Chapters Four and Five of this thesis. Quotes from participants were used to corroborate descriptions of the phenomenon (Braun & Clarke, 2006; Chamberlain, 2009). Interpretation of the significance of identified themes and broader implications were then examined in reference to existing literature.

### **Research quality and other ethical considerations**

The validity and reliability of the present research findings were ensured through rigorous data collection and analysis techniques. Some limitations associated with qualitative inquiry and case study research design must be acknowledged, nonetheless, and steps taken to ensure the trustworthiness of the research findings. The following section discusses the techniques applied in the present research to ensure credibility, transferability, dependability and conformability of the findings. Ethical considerations and delimitations (scope and limitations) of the research findings are also discussed.

### **Scientific rigor in qualitative research**

In qualitative research, quality is determined by the research's trustworthiness (Guba & Lincoln, 1982; Patton, 1990). Patton (1990), and Guba and Lincoln (1982) suggest the trustworthiness of qualitative research rests on its credibility, transferability, dependability and conformability. The credibility, transferability, dependability and conformability were carefully considered in the design of the present research and selection of associated research methods, with a range of techniques employed to ensure the trustworthiness of findings. Specifically, research trustworthiness was ensured through purposeful sampling; triangulation across multiple subcases and time points; ecological validation; practice reflexivity;

bracketing of researcher influence; a dependability audit; and a conformability audit, following data analysis and visualisation. The trustworthiness of the present research, and associated techniques, are described further below.

### ***Research credibility***

Research credibility is provided through participant and ecological validation, as well as rigorous methods, employed by a credible and experienced researcher. Credibility is ensured through techniques such as prolonged engagement with the research context, triangulation (multiple methods, sources, analysts, and/or perspectives) and peer/participant debriefing. The credibility of the researcher and the application of rigorous methods, which effectively reflect the real-world context of OE, as well as the longitudinal, multi-stage design, demonstrate the credibility of the present research (Guba & Lincoln, 1982; Patton, 1990).

Firstly, the case University was selected as a real-world exemplar of an OE context. The participant sample reflected the broader case University and online student populations, and interviews were conducted within an authentic OE environment. This provided ecological validity for the present research, ensuring it adequately reflected the real-world context of OE (Willig, 2008).

Secondly, the collection of data from multiple sources (subcases) across multiple time points allowed for source triangulation of the research findings (Guba & Lincoln, 1982; Patton, 1999). Investigating 43 students' experiences at three time points enabled the researcher to compare experiences across individuals, over time, and across different units/courses of study, thereby increasing the credibility of the research findings. The analysis was also supervised by experienced researchers at the case University, who were able to critique and verify the researcher's interpretations, providing an element of analyst triangulation (Guba & Lincoln, 1982; Patton, 1999). Guidance and debriefing from these experienced researchers ensured rigorous procedures were followed, with a detailed proposal describing the research methodology approved by the University's Human Research Ethics Committee, as well as two academic reviewers, prior to commencing data collection.



Thirdly, all interviews were conducted by the same researcher, who was experienced in online communication and qualitative research; facilitating a consistent and credible approach throughout data collection (Patton, 1999). The researcher was familiar with working and learning in the online environment as a result of prior studies and employment. Her experience in the online environment, including the use of Blackboard and Adobe Connect chat tools, enabled the researcher to facilitate a natural flow of communication, and to address any technical issues as they arose, preventing these from impacting rapport or disrupting participants' capacity to share their perspectives effectively. Understanding the nature of online communication helped the researcher develop rapport and put participants at ease, by pre-empting potential difficulties and empowering participants to stop the interview or contact the researcher through alternative means, when unavoidable technical difficulties arose.

### ***Research transferability***

Transferability refers to the external validity, or applicability of the research findings (Patton, 1990). Often termed generalisability in quantitative research, the transferability of findings describes how applicable results may be to other, similar contexts. Transferability can be enhanced through techniques such as purposeful sampling, and providing comprehensive descriptions of the research context.

Confidence in the transferability of the research findings is provided by the detailed description of the context in which the present research is situated; while purposeful sampling of subcases ensured the findings represent the experiences of genuine online students (Guba & Lincoln, 1982). The resultant findings enable development of propositions for the experience of OE in similar contexts. Generalisation of the findings, however, requires replication of the present research in other contexts, and verification of identified expectations, experiences and outcomes (and perceived connections between these). The detailed explanation of procedures provided in this chapter, nonetheless, will enable future replication of the present research under comparable conditions.

### ***Research dependability***

Research dependability, or reliability, rests on the rigor of research methods employed to ensure similar findings would be observed if the same process was repeated under similar circumstances. Dependability can be provided through stepwise replication of methods by multiple researchers, or through a dependability audit, which clearly documents the process of interpretation. Dependability of the present research is assured through the establishment of clear procedures prior to commencing data collection, along with active documentation of the researcher's actions throughout data collection and analysis, which clearly articulate the process of interpretation (Guba & Lincoln, 1982; Patton, 1990). In particular, the early data analysis process (code generation) was recorded in a Code Book, with development of code descriptions and emerging themes clearly documented throughout the analysis process. Documenting the evolution of data analysis subsequently enabled the researcher to reflect on the analysis process, and test/adjust any understandings against the raw data (interview transcripts), to ensure the findings may be replicated if the same process was followed under similar circumstances (Guba & Lincoln, 1982). The data collection and analysis procedures discussed in this chapter, furthermore, demonstrate the careful planning and execution of the present research, with detailed explanation of associated procedures enabling future replication.

### ***Research conformability***

Finally, conformability is provided through the objectivity of the research data itself (Guba & Lincoln, 1982; Patton, 1990). Techniques such as triangulation, documenting researcher thoughts and assumptions (practice reflexivity) and a conformability audit, which traces findings back to the original data, can enhance conformability in qualitative research. The design of data collection and analysis procedures in the present research, incorporating practice reflexivity, ensured objective descriptions of the OSE could be developed (Guba & Lincoln, 1982). The potential for findings to be influenced by researcher preconceptions or biases was minimised through the use of in-depth interviews, which allowed participants to freely discuss any aspects they felt were salient to the research questions. In addition,

the researcher documented her thoughts throughout the data collection process, in order to later identify and remove potential researcher influence from analysis (Patton, 1990). Through direct transcription of the interviews, furthermore, the researcher was able to easily identify and bracket any unintended influence on participant responses, while ensuring the discussion was accurately recorded. The practice reflexivity provided through these processes ensured objective descriptions of the OSE phenomenon could be developed.

The use of triangulation, a conformability audit and visualisation during data analysis further enhanced the conformability of the present research (Guba & Lincoln, 1982). Triangulation between and within subcases enabled the researcher to identify salient themes across various occasions of OE at the case University. Identification and clarification of themes during data analysis also followed rigorous procedures, which ensured the findings were directly informed by participants' perspectives. Key themes emerging from the data were identified, and data visualisations systematically adjusted, re-formulated and refined to identify their best fit to the data, by connecting these back to the raw data and looking for potential mismatches (negative cases). In tracing researcher interpretations back to the words of participants themselves, the researcher was able to demonstrate further conformability of the data and the research findings.

### **Limitations of case study research**

In addition to ensuring the trustworthiness of the present research, limitations associated with case study research were acknowledged and managed. Historically, case study research has been criticised as lacking in rigor and producing narrow and ungeneralisable results (Eisenhardt, 1989; Yin, 2003). The potential for researcher bias to influence results is frequently raised as a concern by those who discard case studies as effective research strategies. Yin (2003) and Flyvbjerg (2006) highlight such bias is equally relevant in other research strategies, however, and where appropriate measures are taken to ensure the validity and reliability of results, this concern may be resolved. Techniques such as the collection of data from multiple sources across several time points (source triangulation), the use of quotes to verify

emerging patterns for multiple subcases (conformability audit), while documenting the researcher's thoughts and interpretations (practice reflexivity), provided validity and reliability for the present research, and will enable future replication in other settings.

Eisenhardt (1989) warns the complexity of cases may render case study findings non-transferable beyond particular cases. The reverse can also occur. That is, the richness of data collected through case study research may prompt researchers to attempt to capture everything, leading to overly complex explanations. A well-organised database, which stored each interview transcript, corresponding coding/analysis and researcher notes, along with regular reviews of the data throughout the data collection and analysis process, therefore, were used to aid in containing and restricting the collection of data relevant to the research questions, and helped to prevent overextension of the findings.

### **Scope of interpretation**

The delimitations surrounding the chosen research methodology must be acknowledged and taken into account when interpreting and extrapolating from the present research findings. In particular, the reader is warned against inferring the findings beyond the case University context, and is encouraged to consider the nature of the present research sample when applying the findings to other settings. Online interviewing, while shown to be effective in prior research, is also a relatively new technique, which may present its own challenges to future replication.

As a case study, the present research findings are constrained to one case University. Different standards are likely to apply at other institutions, particularly in relation to the information available to students pre-enrolment, course selection criteria, curriculum design, and applicable technology, all of which could affect the OSE. The case University was selected as a suitable exemplar of OE, and, as such, the present research findings may highlight aspects of the OSE, which could apply to similar circumstances at other intuitions. The propositions arising from the present

research, however, require further examination, before any direct conclusions may be drawn about OE more generally, or about the OSE at other institutions.

Similarly, there are limitations to qualitative inquiry and case study methodology, which must be appreciated. As valid techniques in their own right, qualitative inquiry and case study strategies were selected as suitable methodologies for the research questions. It is possible, however, despite the researcher's best efforts to select a meaningful sample, the present research may have unintentionally excluded critical subcases representing different experiences of OE that do not fit the findings (Patton, 1999). Given recruitment and data collection occurred online, it is also possible the participant sample was biased in attracting those who felt particularly comfortable within the online environment. It was expected, nonetheless, all eligible participants would be somewhat capable of using this technology, given its role in online course delivery. Some participants described their inexperience, and/or some discomfort with technology, during their interviews, while fully engaged in the process, furthermore, suggesting online participation itself did not deter less computer literate students from participating.

While appropriate for qualitative inquiry and the specific aim of the present research, the participant sample size is insufficient to draw conclusions about potentially confounding factors, such as field of study, academic and technical experience, or access to resources. The findings, nonetheless, help to guide the scope of further research, which could assess online student expectations, experiences and outcomes across the broader population, and verify propositions arising from the present research. In addition, the present research scope was limited to students commencing fully online courses, while residing in Australia. It is acknowledged, therefore, the present research findings may not be transferable to international online students, in subsequent years of their course, or in higher degree programs.

Ideally, the OSE phenomenon would also be explored through multiple methods. Patton (1999) identifies methods triangulation as particularly valuable in overcoming vulnerability to errors associated with data collection methods. It would be valuable, for instance, for propositions emerging from the qualitative analysis to

be verified through quantitative analysis, to assess how well these may apply to the population more broadly. As the present research formed the basis for a PhD, the magnitude of the methodology needed to be constrained to a manageable size and timeframe, meaning only one method of data collection was applied: in-depth interviews. Triangulation, nonetheless, was provided by the collection of data from a range of subcases, courses and fields of study, across three enrolment points and five interview periods, spanning more than two years. Salient themes, therefore, can be reliably taken to reflect the OSE, regardless of student characteristics, course, or time of year.

The potential for bias in developing the interview schedules was also a significant consideration in designing the present research. To address this concern, the interview schedules were reviewed by senior researchers to verify objectivity, and approved by the case University's Human Research Ethics Committee. In addition, participants were asked to reflect on their experience of being interviewed at the conclusion of each interview, and again at the end of the data collection process, to verify they felt they were given sufficient opportunity to share their perspectives, and this had been accurately shared with the researcher.

Finally, it is acknowledged online interviewing is a relatively new technique, and, as such, intricacies that may have inadvertently affected the present research findings may not yet be apparent. Replicating the present research may also present challenges, where researchers are less familiar with online communication. The researcher found online interviewing to be a highly effective technique, nonetheless, offering significant benefits in terms of data accuracy, time management, objectivity, and effectively establishing and maintaining participant rapport. In particular, it enabled automatic transcription of the discussion; as well as the capacity to covertly monitor, continually review and actively adhere to the interview schedule (e.g., whilst waiting for participant responses). It is hoped the detailed description of the procedures undertaken will further enable effective replication of online interviewing techniques in other research contexts.

## **Ethical considerations**

Alongside the aforementioned research limitations, a number of ethical issues were considered in designing the present research. A comprehensive research proposal document and ethics application were prepared prior to commencing data collection. Ethical and practical considerations were also discussed at a proposal seminar, attended by academic staff and other research students. Following minor amendments, the final research proposal was granted formal approval by two senior researchers and the Human Research Ethics Committee at the researcher's University.

Identified risks to participants were expected to be minor and unlikely. It was acknowledged there might be some possibility of minor discomfort to participants discussing their experiences of OE, where they held negative feelings about their OSE. Participants may have also felt somewhat inconvenienced by attending three hour-long interviews. These risks were clearly articulated and addressed in the Information Statement (see Appendix B) provided to interested participants, and consent forms signed by participants prior to each interview. The interviewer was also experienced in online interviewing techniques, which helped ensure participant discomfort was minimised. Where a participant expressed discomfort or distress in disclosing any information, the interview was paused and the participant was asked whether they were happy for that information to be included in the research, if they would prefer it to be removed from the transcript, and/or whether they felt comfortable continuing with the interview. Participants were also advised of relevant support services available to them, should they wish to discuss any concerns or distress arising during/after the interview. In addition, prior to the commencement of each interview, participants were advised of their right not to respond, or to withdraw any responses provided during the interviews, and all volunteered information was treated with strict confidence and respect. All analysed data was de-identified, and potentially identifying information removed from all reports/papers produced from the findings.

Conducting interviews online and analysing discussions on computer also presented some concern, in that electronic data may be at risk of security and software malfunction. To address these risks, the researcher maintained regular file back-ups and up-to-date virus and spyware protection on her computer, and ensured files were accessible to authorised users only.

### **Summary of research methodology**

In summary, the present research adopted qualitative inquiry methodology, through a case study of the OSE at an Australian public university. The findings were interpreted through a descriptive phenomenological framework, which applied online in-depth interviews and thematic analysis to answer the three research questions, describing how first year university students constructed their lived experiences of OE, and attributed meaning to these experiences. Interviews were conducted with 43 participants at three time points during their first year of study, with interview transcripts analysed to identify key themes that described students' expectations and experiences of OE, and the connections between online students' expectations, experiences and outcomes.

The following chapters present the findings of the present research. Chapter Four describes participants' learner-related lived experiences of OE, and perceived connections between corresponding expectations, experiences and outcomes. Chapter Five then describes participants' lived experiences of OE associated with their institution, and corresponding connections to students' expectations and outcomes. Factors described by participants to have informed their lived experiences and perceived quality of their OSE are contrasted and interpreted, eliciting a thorough description of the OSE. Salient themes, which described students' lived experiences of OE are then summarised and visualised as thematic structures.



## CHAPTER 4: The Lived Experience of Online Education – Part I (The Learner)

The following two chapters present the findings of the present research. This chapter considers online students' *learner*-related expectations, experiences and outcomes, with *institutional* factors to be discussed in Chapter Five. Together, these chapters describe how participants constructed their lived experiences of OE, and attributed meaning to these experiences. Exploring the lived experiences of online first-year university students, Chapters Four and Five address the three research questions:

1. *What is the lived experience of OE, in the context of the first year of study at an Australian public university?*
2. *What are students' expectations of OE, and how do these inform their construction of, and attribution of meaning to their lived experiences?*
3. *How do students' lived experiences of OE inform the perceived quality of their OSE, with regard to their learning, academic performance, satisfaction, and retention outcomes, during their first year of study?*

The present chapter begins by clarifying how online students' expectations, experiences and outcomes were elicited and analysed to shape six themes, each with several sub-themes. A detailed explanation of the lived experience described by each identified theme is then presented, with this chapter focusing on *learner* themes, and Chapter Five presenting *institutional* themes. Each identified theme and sub-theme is introduced, followed by a detailed discussion of corresponding expectations, experiences and outcomes. Specific expectations and experiences of each theme are discussed and compared, with their perceived connection to online student outcomes explored. The learner and institution-related expectations, experiences and outcomes are then brought together later in Chapter Five, illustrating an overall structure of the lived experience of OE, and presenting a thorough account of perceived contributions to a quality OSE. Interpretation of these findings, and their implications for theory and practice, are discussed in Chapter Six.

Throughout the findings chapters, quotes are used to illustrate the online student voice. Pseudonyms have been used, with gender maintained, to preserve participant privacy. It is noted communication in online environments is often informal, with minor typographical errors and shorthand common (Glasser, Dixit, & Green, 2002; Suler, 1997). Quotes have not been corrected, therefore, with errors intentionally retained to preserve authentic participant voices. As prevalence was an important determinant of some identified themes, furthermore, quantitative terminology is occasionally used to convey the incidence of particular experiences. Perceived connections between identified themes and online student outcomes are also examined, in an effort to make sense of the complexities of students' lived experiences; though it is acknowledged these will require further investigation for proposed relationships to be verified. With time a central element of the present research, findings are discussed chronologically, moving from expectation to experience, with discussion of how these expectations/experiences evolved and compared, and their perceived influence on subsequent outcomes.

### **Describing the lived experience**

The present research sought to describe the lived experiences of online students and the connections between their expectations, experiences and outcomes, in the context of students' first year of study at an Australian public university. Across the three interviews with each participant, discussion centred primarily on students' experiences of OE, with their expectations and outcomes explored in the context of these experiences. Students' expectations were discussed at each interview, with the most substantial input provided during their first interview (pre-commencement), when expectations were not yet clarified by experiences in their online course. In the second and third interviews (first and second semesters), expectations were discussed again, with students reflecting on how accurate they felt their initial expectations had been, and what they now expected for the remainder of their studies. Online student outcomes were also discussed during the second and third interviews, with students describing and reflecting on their perceived learning, academic performance, satisfaction, and intentions to continue (retention). The interview timing was a critical component of the present research, facilitating an

understanding of how online students' expectations, experiences and outcomes evolved over their first year of study.

Following analysis of the interview transcripts, patterns of responses were observed between individuals, as well as across individuals' three interviews. The breadth of expectations and experiences raised by participants, coupled with the time constraints of the interviews, made it difficult to contrast specific or individual expectations with resultant experiences. Instead, the collective expectations of the sample were compared with the combined sample's experiences, to identify notable similarities or variations, alongside discrete statements from individual participants actively reflecting on their earlier expectations.

Salient themes and sub-themes describing participants' lived experiences of OE, were elicited from interview transcripts. Each sub-theme represented a prevalent expectation and/or experience across the participant sample, across the three time points, and/or across the broader data set; as well as expectations/experiences explicitly described as important by participants. Comparisons were drawn between participants' experiences and their expectations, as well as subsequent experiences, building a story of how these students experienced their first year of OE. Where participants spoke of particular outcomes, references to specific expectations and/or experiences having influenced those outcomes were examined and analysed, articulating perceived contributions of each theme to the quality of participants' OSE. Participant quotes were subsequently used to verify interpretation.

### **An emerging structure of online education**

Six major themes, incorporating several sub-themes, were identified to describe participants' lived experiences of OE: *Motivation, Ability, Circumstances, Interaction, Curriculum* and *Environment*. These themes, listed in Table 3, were broadly separated into *learner* and *institutional* themes. Learner themes described students' perceived individual capacity to engage with OE, reflecting the first three (MAC) themes: *Motivation, Ability* and *Circumstances*. Learner *Motivation* described the intrinsic elements of students' desire to approach and sustain their participation in learning activities. *Ability* described students' self-assessed competence in

particular skills/activities, which they associated with online and/or university-level learning; and *Circumstances* described the broader life situations surrounding students as they engaged with their online course. Supplementing this, institutional themes described aspects of the OSE specific to the University, reflecting the remaining three (*ICE*) themes: *Interaction*, *Curriculum*, and *Environment*. *Interaction* described the reciprocal connection, engagement and relationships between students and their instructor(s), course content, and/or other learners. *Curriculum* described the content and processes through which students were instructed to engage with their learning. Finally, *Environment* described the infrastructure and systems through which students accessed and engaged with online learning activities.

Table 3: Identified Learner (*MAC*) and Institutional (*ICE*) Themes

	Theme	Sub-themes
Learner themes	Motivation	Concentration
		Commitment
		Self-efficacy
		Interest and passion
		Rewards
	Ability	Academic skills
		Computer literacy
		Content knowledge
		Organisation and time management
		Self-regulation
Institutional themes	Circumstances	Simultaneous priorities
		Peripheral support
		Health and wellbeing
		Study environment
	Interaction	Instructor interaction
		Content interaction
		Peer interaction
	Curriculum	Flexibility
		Challenge
		Relevance
	Environment	Online delivery
		Technology

Figure 6 presents a visualisation of the six identified themes and their sub-themes. *MAC* (learner *Motivation*, *Ability* and *Circumstances*) themes are presented to the left of the thematic structure, and *ICE* (institutional *Interaction*, *Curriculum* and *Environment*) themes to the right. Together, these mapped learner and institutional themes form a ‘*MAC-ICE*’ thematic structure of the OSE; illustrating the range of experiences that were identified to make up the total OSE.

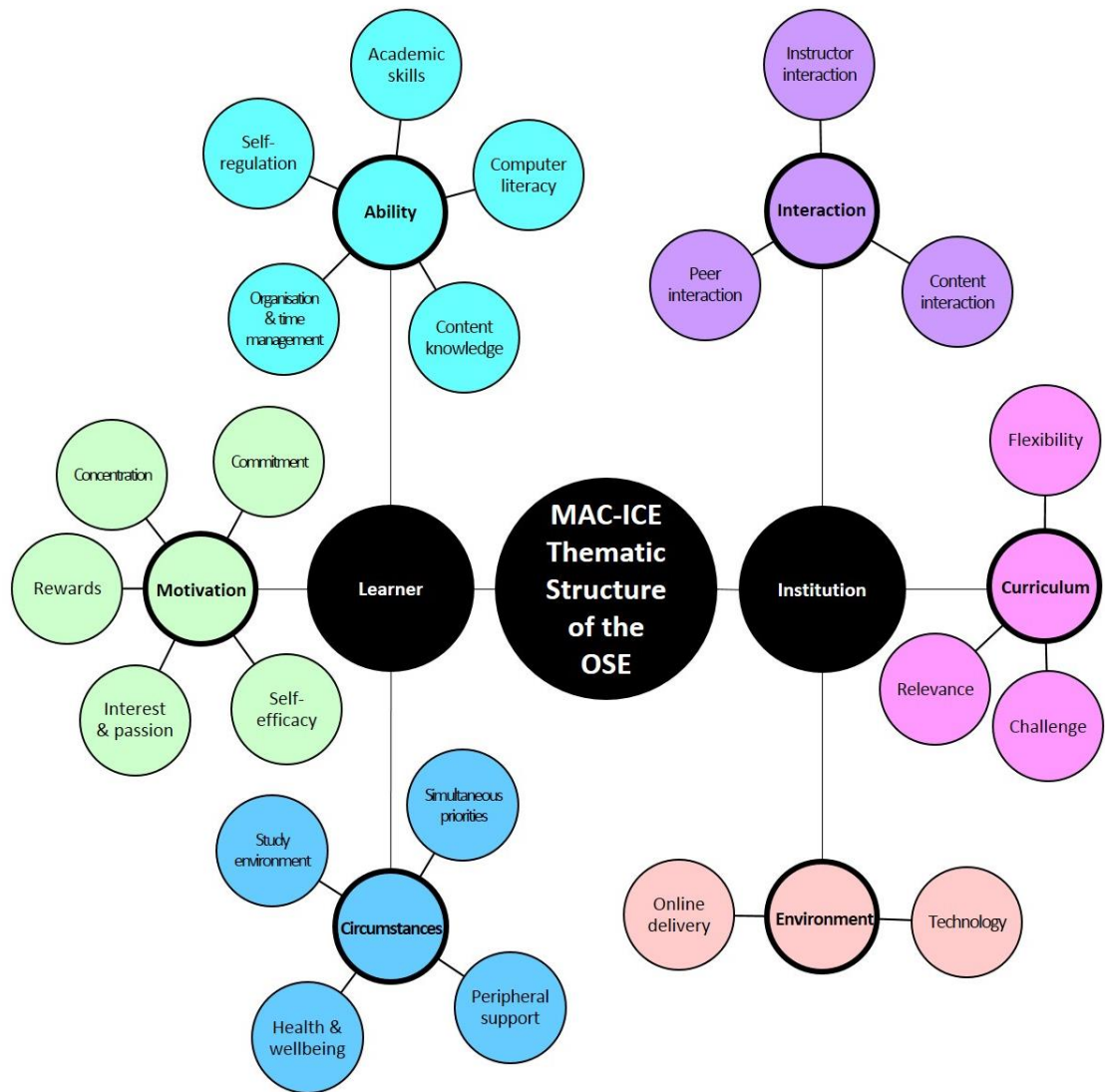


Figure 6. Identified learner (*MAC*) and institutional (*ICE*) themes and sub-themes, which together form a *MAC-ICE* thematic structure of the OSE.

An explanation of the lived experiences corresponding to each identified theme is presented below; with the remainder of this chapter focused on learner themes, and Chapter Five presenting institutional themes. Each theme is introduced, before examining respective sub-themes in detail. Specific expectations and experiences corresponding to each sub-theme are discussed and compared. Other experiences (*MAC-ICE* themes) perceived to have contributed to the experience of that sub-theme are then explored, and the perceived role of the sub-theme in facilitating online student outcomes discussed. Finally, the learner themes are

summarised, before moving to institutional themes in Chapter Five, and interpreting all findings in Chapter Six.

## Motivation

Motivation for learning is defined by the extent to which persistent effort is directed towards learning (Law et al., 2010). In the present research, the theme of *Motivation* specifically focused on students' own drive and energy to engage with OE. That is, the intrinsic elements of students' desire to approach and sustain their participation in learning activities. *Motivation* comprises several sub-themes: *commitment, concentration, self-efficacy, interest and passion, and rewards*, as illustrated in Figure 7. Each *Motivation* sub-theme is introduced below and discussed in the context of corresponding expectations, experiences and outcomes. The connections between each sub-theme and other *Motivation, Ability, Circumstances, Interaction, Curriculum* or *Environment (MAC-ICE)* sub-themes, and the perceived contribution of the *Motivation* sub-theme to students' outcomes, are then summarised.

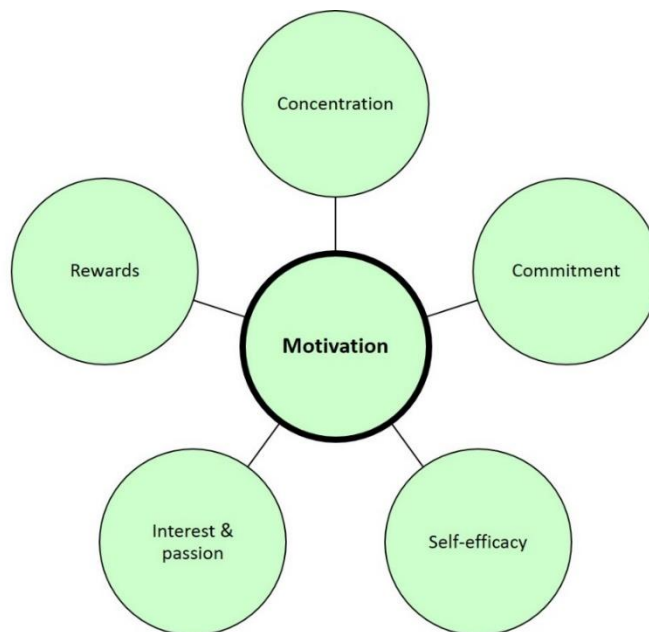


Figure 7. The *Motivation* theme, incorporating sub-themes of *concentration, commitment, self-efficacy, interest and passion, and rewards*.

## **Concentration**

*Concentration* formed an important component of the *Motivation* theme, and of students' lived experiences of OE. Students' expectations and experiences of *concentration* are discussed in detail below. Other *Motivation, Ability, Circumstances, Interaction, Curriculum* and *Environment (MAC-ICE)* themes, described to have contributed to students' concentration are also examined, before discussing the perceived contribution of concentration to online students' outcomes. The lived experience of *concentration*, and its perceived connection to other experiences and online student outcomes, are then summarised.

### ***Expectations of concentration***

Students expected attention and focus would be important throughout their studies. They were wary, nonetheless, of their capacity to avoid procrastination, and to concentrate effectively on their studies. Students anticipated they might struggle to manage distractions, and this could impact effective use of their time. They expected it would take significant self-discipline for them to stay on task and avoid procrastinating, particularly in the absence of external cues, such as seeing other students studying, or attending classes at particular times. Students expected they might need to be more active in focusing their attention as online students, than they would if studying on campus. Teresa, for instance, described the challenges she expected to face in concentrating as an online student:

*I guess if I were to study on campus, I'll feel the pressure when I see everyone else studying. But when I'm studying at home, I don't get the pressure and I always tell myself that I'll "start studying tomorrow".*

### ***Experiences of concentration***

As students expected, they found it difficult to concentrate on their studies, manage distractions and avoid procrastination, during their first semester. They acknowledged this was a normal challenge of university, nonetheless, and they would need to become more disciplined in future. Students found it particularly difficult to concentrate in the absence of visual cues, strict course scheduling and/or face-to-face interaction, which they felt might have motivated them further if they



were studying on campus. John, for instance, described feeling tempted to procrastinate during his first semester:

*When I did get time to sit down and study I found myself thinking there is so much other work/things to be done around the house etc.*

With experience, students became more cognisant of the concentration necessary for their studies. They expected to be better prepared for coming semesters, as a result of recognising and establishing study habits that enabled them to focus more effectively on their studies, such as removing distractions and scheduling time for reading. Students continued to anticipate effective concentration would be important, and acknowledged it would not always be easy to stay focused. Ruby, for instance, described the need to actively push herself to concentrate and avoid procrastination, during her second semester:

*I have to really make myself sit down and do things and not put it off.*

### ***Contributions to concentration***

Students described several factors having contributed to their concentration, corresponding to a number of other *MAC-ICE* themes. Other aspects of students' *Motivation*, including a weak, superficial or uncertain *commitment* to their course, limited the attention students' were willing to dedicate to their learning. In contrast, a deep *commitment* to their course, along with enjoyment and curiosity for topics (*interest and passion*), inspired students to focus on their studies. Laverne, for instance, described the deep commitment to her course as encouraging her to concentrate throughout her first year:

*I think I have been able to do so much because my degree is my number one priority.*

Students' *Ability* also contributed to their concentration. Students found it difficult to identify where they needed to prioritise their efforts, with weak *self-regulation* resulting in inappropriate or suboptimal allocation of attention. Poor *organisation and time management* condensed the attention students were able to commit, forcing them to neglect some learning activities. With many tasks requiring

their attention, students were often pressed for time and needed to prioritise their efforts on what mattered most. When pressured, some students focused on activities directly related to marks. Optional activities, such as online discussions, exercises and further reading, were dropped in favour of those essential to assignments and exam preparation. Good *time management* and *self-regulation*, on the other hand, enabled students to adapt their efforts to meet their learning needs, while prior familiarity and understanding of topics (*content knowledge*) allowed students to focus instead on content that is more complex. Samantha, for instance, described how taking on fewer units enabled her to concentrate more effectively during her second semester:

*Went for 2 [units per semester]... could divide my time better and give each unit fuller attention.*

Students' broader life *Circumstances*, including their *simultaneous priorities*, *peripheral support*, *study environment*, and *health and wellbeing*, contributed to their concentration. Accommodations and encouragement from significant others and employers facilitated and reinforced students' concentration. Having a *study environment* free of distractions further enabled students to concentrate. Having many commitments outside the course, on the other hand, restricted students' capacity and willingness to concentrate on their studies, particularly when other responsibilities were attended to concurrently (e.g. caring for children while reading). The lack of a dedicated physical study space also forced students to study where they were susceptible to distractions or interruptions, while poor *health and wellbeing* reduced students' capacity to concentrate. Julie, for instance, described the influence of grief on her concentration, during her first semester:

*I lost a really good friend in a car accident at about this time and that made it very hard for mr [sic] to focus.*

Students' concentration was also described to have been influenced by their course and institution. *Interaction* with course *content* encouraged and helped to sustain students' attention. Dynamic, appealing and interactive audio-visual content engaged students' and encouraged associated concentration. Static, text-only, or vague learning materials, on the other hand, disengaged students' attention, and

discouraged their concentration. Delores, for instance, described how the quality of learning materials limited her concentration, during her second semester:

*Pre-recorded from the previous year ... made it hard coz [sic] dates were different and you couldnt [sic] hear the questions of on campus students.*

The *Curriculum* also influenced students' concentration, with regard to the degree of *flexibility* provided. Highly flexible course structures, with no imperative to participate at particular times or in particular ways, placed much of the control and responsibility for students' concentration into their own hands. This freedom enabled some students to procrastinate. A strictly defined pace of learning, with requirements to participate in regular synchronous activities, however, was equally problematic, limiting students' capacity to participate at optimal times and locations for their concentration. Teresa, for instance, described the benefit of being able to learn at her own pace, during her first semester:

*I'm a slow learner, so it's good to learn at a pace I can create.*

Finally, the institutional learning *Environment* contributed to students' concentration. *Online delivery* was felt to have enabled students to procrastinate more than they may have on campus. The absence of strict scheduling or overt social cues, which may have obliged students to act or prompted them to pay attention if they were studying on campus, again left students in primary control of their concentration. Reflecting on his first semester experience, for instance, Stephen described the challenge of taking responsibility for pushing himself to focus on study, as an online student:

*As there was very little set time, sometimes it was difficult to get motivated to get things done. As opposed to on campus where you have set lectures/seminars so must have the work done.*

### ***Outcomes of concentration***

Following their first and second semesters, students described their concentration as having influenced the perceived quality of their OSE. Poor

concentration restricted students' capacity to digest and absorb concepts, resulting in shallow learning. In contrast, where students were able to concentrate effectively on their studies and avoided distractions, their learning improved. Paying conscious attention to activities and readings facilitated greater understanding. With experience, students began to actively remove distractions and dedicated more time to their studies, committing themselves to maximise their concentration, in an effort to learn more effectively. Andrea, for instance, described how actively focusing on her studies, and rehearsing, helped her to learn deeply during her first semester:

*I think I have [learned] pretty well.. I did a lot of rehearsing.*

Poor concentration while completing assessments reduced the quality of students' work, resulting in weaker academic performance. Students recognised where they had not dedicated sufficient attention to their studies, and regretted this impacting their results. In contrast, strong concentration maximised students' efforts and enhanced the quality of their work, resulting in higher grades. Students began to recognise this more significantly, as they progressed; identifying strong academic performance relied heavily on their concentration. Zander, for instance, described recognising, as a result of his partner's advice, that his second semester results may have been limited by poor concentration:

*My wife was kicking my ass, kept saying what score would I have gotten if I had applied myself.*

In addition to influencing learning and academic performance, students' concentration was perceived to have contributed to their satisfaction. Students felt proud where they had applied their attention and energy in meaningful ways. Recognising their experience was not easy, and required substantial concentration; participants felt they had accomplished considerable feats, validating the significance of completing a university qualification. Valentina, for instance, shared her pride in having overcome challenges to complete her first year:

*This last 12 months have been harrowing ... still pass my units through both the semesters I am proud of myself now ... it has been a good journey.*

### *Concentration summary*

The above descriptions suggest students' lived experiences of OE, and the perceived quality of their OSE, were influenced by students' concentration. Online students may not be naïve in their expectations of the effort required to succeed. They were mindful OE may require self-discipline and pose particular challenges with regard to procrastination; as well as a greater propensity to be interrupted or distracted, than might on-campus education (Osborne et al., 2009). Awareness alone, however, may be insufficient to overcome challenges associated with poor concentration. Despite recognising its importance, participants struggled to focus effectively during their initial semesters, suggesting some online students may lack the necessary skills, capacity, facilities or support, at least initially, to ensure effective concentration (Didarloo & Khalkhali, 2014); and/or may not fully appreciate the challenges this will pose. Experience, nonetheless, may provide online students with a greater appreciation of the temptations that threaten their concentration, and the need to actively manage these (Kikuchi, 2006; Osborne et al., 2009).

Participants' lived experiences of *concentration* are summarised in Figure 8. The expectations and experiences (themes) perceived to have contributed to students' concentration are shown in the left hand box; and online student outcomes influenced by this concentration shown in the right hand box. Concentration may rely on online students' *commitment* to their course and *interest* in associated content (*Motivation*); *time management*, *prior content knowledge* and *self-regulation* (*Ability*); *support* from significant others, access to a suitable *study environment*, manageable *simultaneous priorities* and good *health* (*Circumstances*; Debozy, 2009). In addition, *Interactive content*; a *flexible Curriculum*, which regularly engages students while allowing them to study at the most appropriate time/place; and *online delivery* conditions (*Environment*) equivalent to presumed on campus conditions (Osborne et al., 2009), may enhance online students' concentration.

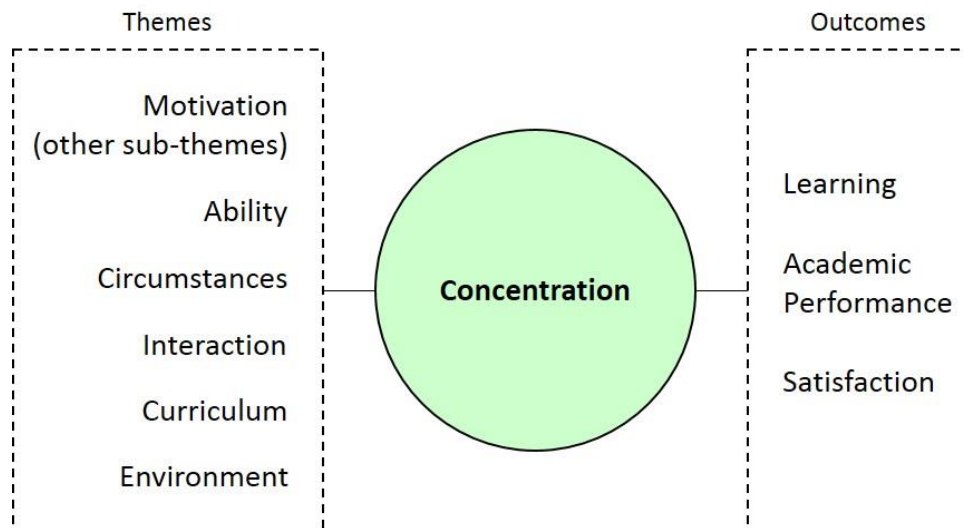


Figure 8. The perceived connections between *concentration*, other *MAC-ICE* themes (left), and online student outcomes (right).

Online students' concentration may subsequently help to facilitate strong learning, academic performance and satisfaction, as shown to the right of Figure 8. Effective concentration may encourage more sophisticated learning strategies, enabling students to learn deeply (Debozy, 2009; Xie & Huang, 2014). Where they struggle to focus effectively on their work, however, students may resort to shallow learning strategies, and acquire/retain little knowledge as a result. If students struggle to concentrate, the quality of their work, and their academic performance, may also suffer (Waschull, 2005). Where students are able to overcome these challenges, and concentrate effectively on their studies, however, they may feel proud of their accomplishments, and satisfied with their OSE (Dziuban et al., 2015).

### Commitment

In addition to *concentration*, students' *commitment* to their studies formed an important aspect of the *Motivation* theme, and of students' lived experiences of OE. Students' expectations and experiences of *commitment* are discussed in detail below. Other *MAC-ICE* themes, described to have contributed to students' commitment are again examined, before discussing the perceived contribution of commitment to online students' outcomes. The lived experience of *commitment*, and its perceived connection to other experiences and online student outcomes, are then summarised.

### ***Expectations of commitment***

Students expressed strong intrinsic investment in completing their online course, and expected a strong work ethic would serve them well. They held a personal commitment to learning and associated career opportunities, which had motivated them to enrol. Some students had actively set aspirational goals for their achievement in order to further motivate and challenge themselves to put in requisite effort. Students anticipated, nonetheless, they might struggle to maintain their commitment if the course became difficult or dull. They acknowledged it was unlikely all aspects of their experience would be enjoyable, and their determination might wane if activities were less interesting, less exciting, or not directly relevant to their goals. Eliza, for instance, described her deep and long-standing desire to study Psychology, and appreciation for the dedication it would require:

*I thought long and hard before committing to this and I've weighed up the pros and cons and its [sic] what I want to do and I tend to not give up easily once I've made up my mind.*

### ***Experiences of commitment***

Students' experiences were consistent with these expectations. Students found their online course to require significant commitment; yet their commitment fluctuated across the semester, and students struggled to remain fully invested at all times. As students expected, they found it especially challenging to maintain commitment once their initial excitement waned and the course became more difficult. There were also aspects of the course they did not find especially interesting or engaging, and these required students to actively stimulate themselves to complete associated tasks, by focusing on their end goals. This challenge to maintain commitment was identified by Annette, during her first semester:

*Its [sic] always hard to maintain the momentum to dedicate the time to routine study.*

For some students, experience inspired greater commitment and determination toward their studies. Where reassured they were capable of succeeding, students felt motivated to sustain their efforts, and their commitment

was strengthened. Janice, for instance, described feeling more committed to her course, following success in her first semester:

*After a few good results I became more determined.*

As they progressed, students' initial excitement declined and the realities of what OE required began to set in. Students anticipated strong commitment would continue to be essential; and expected they may need to put more effort into their studies in future, having identified waning enthusiasm as a barrier to their success. Students accepted that achieving their aspirations and succeeding in the course may not be as easy as first anticipated. Nevertheless, they committed themselves to persist, and to dedicate more effort in future. Lisa, for instance, described her commitment as the primary challenge in completing her first year:

*It's not difficult. It's just commitment really.*

### ***Contributions to commitment***

Several factors were described to have contributed to students' experiences of commitment, corresponding to a number of other *MAC-ICE* themes. Students' *Motivation*, including strong *interest and passion* for particular topics, drove students to invest deeply in related content/activities, strengthening their commitment. Weak or reduced interest, on the other hand, tested and threatened students' dedication to their course. Layla, for instance, described realising that her interests did not align strongly with her course, affecting her commitment during her first semester:

*I realised I am much more interested in writing business reports than academic, technical or scientific reports.*

Students' *Circumstances* also contributed to their commitment. A strong *peripheral support* network reinforced students' commitment, and inspired them to continue to invest themselves in their studies. Laverne, for instance, described her partner's support enabling her to commit to her studies, throughout her first year:



*It has helped that my husband is really supportive and knows how important this is to me.*

Along with students' interest and support from significant others, *Interaction* with *instructors* played an important role in students' commitment. Encouragement and positive feedback from instructors reinforced and strengthened students' dedication to their studies. Stephen, for instance, described how contact with an instructor in his first semester encouraged him to maintain his commitment to the University:

*One of the units is with the very good lecturer. Probably the only reason I didnt [sic] move universities.*

The degree of *Curriculum challenge* and *relevance* also contributed to students' commitment. Overwhelmingly complex, or overly simple content influenced students' capacity and willingness to invest the required effort. Students' commitment was further weakened by limited or unclear application of learning activities to their aspirations. Kevin, for instance, described his concern that some units may not offer sufficient relevance to him as a mature aged student, causing his commitment to wane during his first semester:

*Really focuses on school leavers so was menial and left me questioning what uni was all about.*

### ***Outcomes of commitment***

Following their first and second semesters, students described their commitment to have influenced the perceived quality of their OSE. Students struggled to consistently invest themselves throughout their first year, particularly when the course became more difficult or less interesting. Where they were able to push through these challenges, with their sights firmly set on the big picture, students were proud of their achievements, felt they had achieved something worthwhile, and expressed satisfaction with their OSE. This sense of pride was expressed by Alana, following her first semester:

*I realise now that I coped with quite a bit the last few months and I feel very pleased that I completed the semester.*

Students' commitment also contributed to their retention. A weak commitment to their course corresponded to reduced importance placed on completion. Students considered withdrawing when they felt the effort required to persist outweighed their commitment. Where they lacked clear long-term goals, or did not consider their study a high priority, students considered the effort required to succeed was excessive, and chose to withdraw. Catherine, for instance, described her course as requiring more time and effort than she was willing and able to commit:

*If the unit I just completed had been easier and less time consuming I probably would have continued.*

### ***Commitment summary***

The above descriptions suggest students' lived experiences of OE, and the perceived quality of their OSE, were influenced by their commitment. Online students may be cognisant of the role they play in committing themselves to learn. They may have clear end goals and associated expectations in mind, which may help to push them through the hard times (De Jong et al., 2011; Kember, 1989; Seijts & Latham, 2011). Online students may accurately expect their commitment to be important, furthermore, yet find it difficult to maintain this commitment throughout their studies. The alignment between students' goals and interests, and their chosen online course, therefore, could be problematic for some students; or online students may lack sufficient support to overcome challenges and maintain their commitment, throughout their course.

Participants' lived experiences of *commitment* are summarised in Figure 9. The expectations and experiences (themes) perceived to have influenced students' commitment are shown to the left, and online student outcomes influenced by this commitment to the right. Online students' commitment may be influenced by their continued *interest* in their course (*Motivation*); *peripheral support* (*Circumstances*); *instructor Interaction* (Sansone, Smith, Thoman, & MacNamara, 2012); and the

degree of *Curriculum challenge* and *relevance* experienced (Tomas, Lasen, Field, & Skamp, 2015).

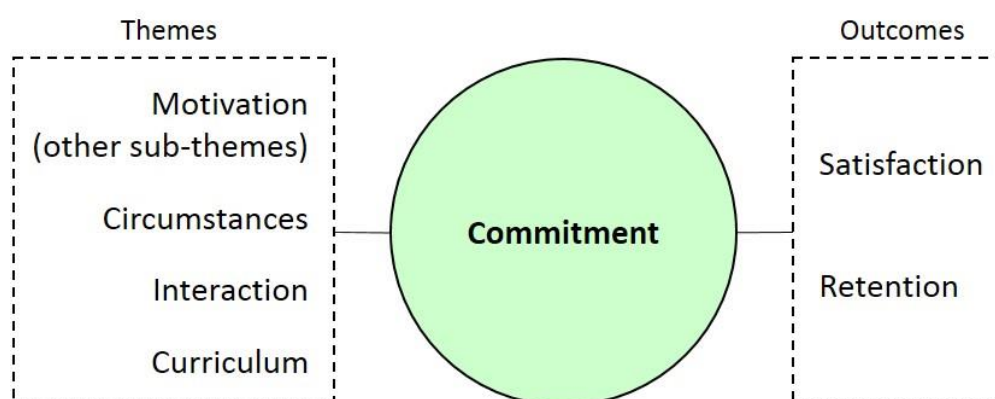


Figure 9. The perceived connections between *commitment*, other *MAC-ICE* themes (left), and online student outcomes (right).

Online students' commitment, subsequently, may help to facilitate strong satisfaction and retention, as shown on the right of Figure 9. Where students commit to long-term goals and maintain their intellectual investment in their course, in spite of challenges, they may feel proud and satisfied with their OSE (Chen et al., 2017; Chiu et al., 2007; Dziuban et al., 2015). Where students hold a weak commitment to their course, on the other hand, they may view persistence as less important, and elect to withdraw from their online course.

### Self-efficacy

Alongside *concentration* and *commitment*, students' *self-efficacy* formed an important component of their *Motivation*, and their lived experiences of OE. Self-efficacy is defined as a student's belief in his/her personal capabilities (Bandura, 1997). Students' expectations and experiences of *self-efficacy* are discussed below, along with other *MAC-ICE* themes described to have contributed to students' self-efficacy. The perceived contribution of self-efficacy to online students' outcomes is then discussed, and the lived experience of *self-efficacy*, and its perceived connection to other experiences and online student outcomes, summarised.

### ***Expectations of self-efficacy***

Students were confident in their capacity to fulfil the requirements of their online course, believing they were highly capable of succeeding. They referred to prior experience and subject knowledge as a source of this confidence, and described their capability as comparable with others who had attempted HE (see also *Academic skills* and *Computer literacy*, pages 143 and 147). Students expected this self-efficacy would provide a sound basis to engage with their studies. They were mindful of weaknesses, nonetheless, planning to capitalise on strengths and overcome weaknesses as they progressed. Kevin, for instance, described having considered his capabilities in preparation for his studies:

*I think the good thing is I have identified the weaknesses and stresses I will have with my studies and therefore can work on them.*

### ***Experiences of self-efficacy***

Following commencement, students felt reassured of their capabilities and motivated to persist. With feedback and encouragement, students continued to feel increasingly confident, with few articulating a reduction in their self-efficacy, despite finding their course difficult (see also *Challenge*, page 218). Having overcome substantial challenges, students felt reassured they were able to succeed, in spite of the unknown. Julie, for instance, described her self-efficacy growing as she became more experienced, during her second semester:

*I think that I am feeling more at ease and more confident in [sic] my abilities now. Where as in the beginning I was a bit doubtful of my abilities.*

### ***Contributions to self-efficacy***

Several factors were described to have contributed to students' self-efficacy, corresponding to a number of other *MAC-ICE* themes. Students' *Ability*, including strong *academic skills* and *computer literacy* helped address perceived weaknesses. Familiarity of course topics (*content knowledge*) also gave students increased self-

confidence. Chloe, for instance, described her self-efficacy having improved as a result of being able to build on prior knowledge, during her second semester:

*... An area I knew quite alot [sic] about and allowed me to build some confidence.*

*Interaction* with *instructors* also contributed to students' self-efficacy. Vague, unhelpful, or a lack of feedback from instructors led students to doubt their capacity to fulfil course requirements. Meaningful feedback and encouragement, on the other hand, inspired and reinforced students' self-confidence. Justin, for instance, described having discussed concerns with a lecturer in his first semester, who reassured him of his capacity to succeed:

*I did have a chat with one and she eased my mind about things, she said "dont [sic] get too involved as you have experience on your side and that will get you thru [sic]", I guess it did.*

### ***Outcomes of self-efficacy***

Following their first and second semesters, students described their self-efficacy as having influenced the perceived quality of their OSE. Belief in their capacity to fulfil course requirements increased students' satisfaction, particularly where they had overcome perceived weaknesses. Reassurance they were capable of succeeding at university, signalled by high marks and instructor feedback, gave students a sense of hope and pride. Believing they had the capacity to succeed, students felt more satisfied with their experience; knowing they had identified and worked hard to overcome weaknesses. Kristi, for instance, described feeling confident and immensely proud, having done well in her first semester:

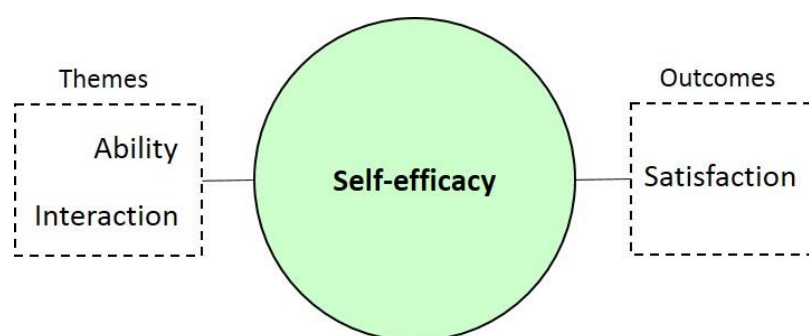
*I got a high distinction for the unit - which madde [sic] me feel really chuffed with myself and greatly relieved that I could actually do this.*

### ***Self-efficacy summary***

The above descriptions suggest students' lived experiences of OE, and the perceived quality of their OSE, were influenced by students' self-efficacy. Online

students may feel confident upon commencing their course (Antonis et al., 2011). Belief in their capacity to satisfy course requirements may drive students' attitudes and approaches to learning, with strong self-confidence motivating them to participate and engage with their studies. Participants' consistently reported self-confidence, furthermore, suggests students' self-efficacy during their course may be reinforced by their development of a deeper understanding of what is required to succeed in the course, rather than resting on a personal judgement of their underlying capability.

Participants' lived experiences of *self-efficacy* are summarised in Figure 10. The expectations and experiences (themes) perceived to have contributed to students' self-efficacy are shown to the left, and the online student outcomes influenced by this self-efficacy to the right. Initial self-efficacy may be influenced by prior (*content*) *knowledge*, *academic skills* and *computer literacy* (*Ability*; Shen, Cho, Tsai, & Marra, 2013). During their course, meaningful feedback (*Interaction*) from *instructors* may clarify weaknesses and reassure students of their capacity, increasing their self-efficacy (Boud, 2010; Sansone et al., 2012; Shen et al., 2013). Limited or confusing communication with instructors, on the other hand, may leave students unsure of what is required or how to improve, leading them to doubt their capacity to succeed.



*Figure 10.* The perceived connections between *self-efficacy*, other *MAC-ICE* themes (left), and online student outcomes (right).

Online students' self-efficacy may subsequently inform their satisfaction. Where students have confidence in their own ability, they may enjoy their course, be proud of their achievements, and feel more satisfied with their OSE (Palmer & Holt, 2009; Shen et al., 2013). Participants commenced confident they were capable of

succeeding in their online course, furthermore, and where reassured of this belief, their experience was enjoyable and satisfying. A positive outlook, supported and encouraged during an online course, therefore, may contribute to a satisfying OSE.

### **Interest and passion**

Students' *interest and passion* contributed to their *Motivation*, and their lived experiences of OE. Students' expectations and experiences of *interest and passion*, and *MAC-ICE* contributions to students' interest and passion, are again examined below, before discussing the perceived contribution of interest and passion to online students' outcomes. The lived experience of *interest and passion*, and its perceived connection to other experiences and online student outcomes, are then summarised.

#### ***Expectations of interest and passion***

Students described their enjoyment of learning, and curiosity for particular topics, as having motivated them to select their particular course. They expected to enjoy course content, and the challenge of learning new things. Students were especially eager to learn more about topics for which they held a passion, and were excited by the impending opportunity, as described by Carolyn:

*I have a very keen interest in this topic, so because of that I think I will really enjoy the whole process.*

#### ***Experiences of interest and passion***

As students expected, they found their courses interesting, and cherished the opportunity to extend their knowledge. Their enjoyment further enhanced their passion towards the course and their chosen field of study. With experience, students' interests were sparked in new topics. They acknowledged, nonetheless, that their interest could decline, and they may need to find additional ways to motivate themselves as the course becomes more complex. Students' recognised interest and passion alone, while important, would not be sufficient for them to succeed. They would need to apply substantial effort to overcome more challenging or mundane parts of the course. Nevertheless, students' expected to continue to enjoy much of

their course, and looked forward to learning more. Aidan, for instance, acknowledged the likelihood of waning interest following his first semester, notwithstanding his enjoyment so far:

*I'm sure the excitement will drain as I dive deeper into the course but for now its [sic] all rather enjoyable!*

### ***Contributions to interest and passion***

Several factors were described as having contributed to students' interest and passion, corresponding to a number of other *MAC-ICE* themes. Firstly, students' *Ability*, including prior *content knowledge*, influenced their enjoyment and curiosity for given topics. The exploration of new topics inspired students' interest, while strong familiarity and deep understanding of topics reinforced their enjoyment and curiosity for those topics. Martha, for instance, described her particular enjoyment of topics that were new to her, during her first semester:

*It is really interesting information and I love learning new stuff.*

Students' *Circumstances* also contributed to their interest and passion. Curiosity from significant others (*peripheral support*) stimulated students' interest in particular topics. Being able to share their learning with others who showed an interest, further inspired students' own passion for associated topics. Chloe, for instance, described discussing particular topics with her father as contributing to enjoyment of her second semester:

*My dad ... great to discuss stuff like economics with someone else!*

In addition to students' *Ability* and *Circumstances*, *Interaction* with *instructors*, *peers* and course *content* contributed to their interest and passion. Meaningful connection with peers inspired and supported students' interest in course content. Encouragement from instructors further stimulated curiosity for particular topics, while engaging learning materials and activities facilitated students' enjoyment. Brenda, for instance, described an instructor having made her first semester more interesting than she had expected:



*I thought was going to be boring - but the lecturer was very engaging and easy to listen to.*

Finally, the *Curriculum* contributed to students' interest and passion. Moderately *challenging* content, which was clearly *relevant* to students' personal and professional aspirations, provided an enjoyable experience, and furthered students' curiosity for associated topics. Eliza, for instance, described the application of her studies having reinforced her interest in associated topics, during her second semester:

*The subjects were all really interesting and easy to apply to everyday life so I found myself noticing and recognising concepts and how these relate... [pause] it was really good.*

### ***Outcomes of interest and passion***

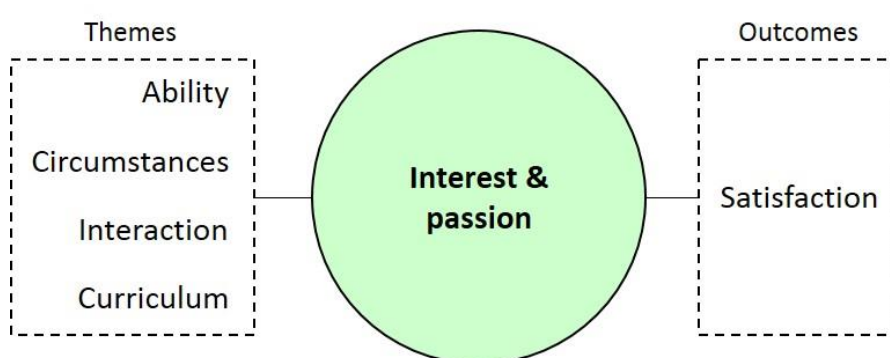
Following their first and second semesters, students described their interest and passion as having influenced the perceived quality of their OSE. Low enjoyment, disinterest, or a lack of curiosity for a given topic, resulted in boredom and reduced students' overall satisfaction. Deep interest and passion, on the other hand, facilitated enjoyment of learning activities, increasing students' satisfaction. Students appreciated the opportunity to learn about topics for which they held a passion, and extending their knowledge of these topics was especially satisfying. Lisa, for instance, described her satisfaction, having explored interesting content during her first semester:

*Being able to learn all that interesting stuff is a real privilege.*

### ***Interest and passion summary***

The above descriptions suggest students' lived experiences of OE, and the perceived quality of their OSE, were influenced by students' interest and passion. Students' interest may be central to their selection of particular online courses (Kung, 2002; Nonis & Fenner, 2011), and they may subsequently enjoy opportunities to learn more and indulge their curiosity during their course. Participants' lived experiences of *interest and passion* are summarised in Figure 11,

with *MAC-ICE* themes perceived to have influenced students' interest and passion shown to the left, and online student outcomes influenced by this interest and passion, to the right. Experiences of interesting content may be dependent on the extent of students' prior *content knowledge (Ability)*; interest (*support*) from significant others (*Circumstances*); *instructor, content and peer Interaction* (Sansone et al., 2012); and access to *relevant and interesting challenges (Curriculum)* (Sansone et al., 2012; Tomas et al., 2015). A course may not be consistently exciting, however, and online students may acknowledge the need to put substantial effort into more mundane activities to compensate (Debozy, 2009).



*Figure 11.* The perceived connections between *interest and passion*, other *MAC-ICE* themes (left), and online student outcomes (right).

Where students hold a deep interest in course content, they may find their OSE more satisfying (Chiu et al., 2007; Nonis & Fenner, 2011; Sinclaire, 2011). Less interesting content, on the other hand, may bore, demotivate and dissatisfy online students. Participants predicted they would find their course interesting, though expected some aspects would be less exciting, furthermore, suggesting online students may not be naïve in expecting every part of their course to be interesting; yet the more interesting content they experience, the more satisfied they may be overall.

### **Rewards**

Finally, students' *Motivation*, and their lived experiences of OE, were influenced by the anticipation and experience of *rewards*. Students' expectations and experiences of *rewards*, and associated *MAC-ICE* contributions, are discussed in

detail below, before examining the perceived contribution of rewards to online students' outcomes. The lived experience of *rewards*, and its perceived connection to other experiences and online student outcomes, are then summarised.

### ***Expectations of rewards***

Students expected to attain valuable knowledge and skills through learning new concepts, developing new capabilities and achieving a formal qualification applicable to future employment and professional opportunities. Students also felt their experience would help them grow personally, by challenging their cognitive abilities and proving they could learn and accomplish significant feats. Students viewed study as an opportunity to challenge themselves and were determined to prove, to both themselves and others, that they were capable of achieving a university qualification. In addition, they hoped the experience would position them as inspirational role models, and enable them to contribute to their community in meaningful ways. Students expected to feel great pride, particularly upon completing their degree, when they will have achieved a substantial accomplishment, as a result of considerable effort and skill. Gabriel, for instance, described the anticipated rewards of new knowledge and perspectives:

*It will allow me to 'think outside the square', learn different point of views, increase my knowledge and understanding.*

A small number of students, however, described their decision to study as based primarily on gaining evidence of a qualification. Marcus, for instance, discussed being motivated purely by the prospect of receiving his Certificate:

*I see no point in pretending that I'm looking forward to this, or doing it for any other reason than emerging with a piece of paper at the end of it!*

### ***Experiences of rewards***

Students' experiences largely supported their reward expectations. They expressed substantial appreciation for the personal and professional rewards experienced during their first and second semesters. New knowledge and skills had already benefited some students; having been offered new job opportunities, applied

their learning to concurrent employment, or simply felt more confident doing particular tasks at work. Students felt proud of what they had achieved, and had seen this pride transfer to significant others, who were now also considering university. The acquisition of new knowledge was itself felt to be a particularly rewarding and transformative experience, as described by Julie, following her second semester:

*I have grown within, I have learnt a lot, I have become more focused and have become more motivated as a person. My family comment on the changes.*

### ***Outcomes of rewards***

While no other *MAC-ICE* themes were explicitly reported to have contributed to students' experience of rewards, the personal, intellectual, professional and social/community benefits offered by their online course influenced the perceived quality of their OSE. Students particularly appreciated opportunities to gain skills and knowledge applicable to their career and employment aspirations. Able to apply their learning to situations outside their course, while still in their first year of study, students felt reassured their course was valuable and worthwhile. As a result, students were grateful for what they had gained so far, and expressed satisfaction with their OSE. Martha, for instance, described the experience of rewards during her first semester, as satiating the perceived challenges and limitations of OE:

*I am [satisfied] ... Sometimes it can be lonely working on-line - but the rewards are worth it.*

### ***Rewards summary***

The above descriptions suggest students' lived experiences of OE, and the perceived quality of their OSE, were influenced by the experience of *rewards*. Anticipated personal, intellectual, professional and social benefits were important motivators for online students, with expected rewards of substantial importance in selection of their course (Barron & D'Annunzio-Green, 2009; Benson, Hewitt, Heagney, Devos, & Crosling, 2010; Scutter et al., 2011; Stone et al., 2016). The experience of applicable rewards further motivated students to engage with their

studies (Law et al., 2010; Suler, 2004). No other *MAC-ICE* themes, however, were explicitly reported to have influenced students' experience of rewards.

Figure 12 illustrates the perceived connection between *rewards* and online student outcomes (right). The experience of rewards may increase online students' sense of self-worth and reinforce the value of their studies. Online students may not necessarily wait until completion of their degree to apply their learning, furthermore, and may appreciate opportunities to experience the benefits of their studies in employment, while they are still learning (Ciampa, 2014; Kim, 2009; Yager, 2000). Having realised these rewards, students' overall satisfaction may be increased (Dziuban et al., 2015).

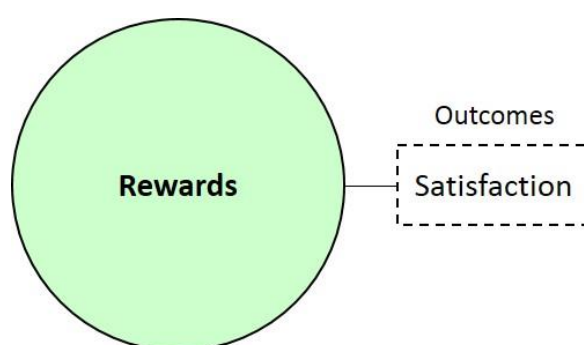


Figure 12. The perceived connection between *rewards* and online student outcomes (right).

### Motivation and the Online Student Experience

Participants' responses demonstrate *Motivation* may be important to students' lived experiences of OE, and the perceived quality of their OSE. While online students may experience challenges to their *commitment*, *interest* and *concentration* during their first year (Kember, 1989; Kikuchi, 2006), they can hold reasonably accurate expectations for these aspects. Online students are excited about commencing their course, with their *interest and passion* for particular topics a significant motivator (Ciampa, 2014; Nonis & Fenner, 2011; Togia, Korobili, & Malliari, 2012); yet they recognise it takes more than mere interest in a topic for them to succeed (Debozy, 2009). Online students may anticipate the importance of persistent *concentration* and *commitment* (Kember, 1989; Kikuchi, 2006; Seijts & Latham, 2011). They may also be strongly motivated by the opportunity to develop

professionally and personally, with potential employment opportunities (*rewards*) a significant driver of their intentions to study (Barron & D'Annunzio-Green, 2009; Scutter et al., 2011; Stone et al., 2016).

Where students hold overly optimistic views of OE, one might expect they would experience a crisis of confidence when 'reality' strikes (Christie, Tett, Cree, Hounsell, & McCune, 2008); yet this was not the case for participants in the present research. With experience and meaningful feedback, students gained increasing clarity in what was expected of them, and increased their confidence; enhancing and refining their *self-efficacy*, and motivating them to persevere when faced with challenges (Decker & Beltran, 2015; Huntly & Donovan, 2009; Ryle & Cumming, 2007). Students were able to learn what they needed to do differently, and felt better prepared to tackle further challenges as their course progressed.

With *Motivation* perceived to be an important aspect of the OSE, it is clear students do not necessarily commence with naïve beliefs about OE. Participants were mindful and cautious of the role they would play in driving their own learning. They did not expect to be passive recipients of learning; rather students were actively motivated to gain mastery of particular concepts, for which they held great interest and aspirations. Nevertheless, participants struggled to maintain their *concentration* and *commitment* when their studies became more difficult or demanding; suggesting while online students may be aware of this challenge, their commitment may not be sufficient to sustain deep engagement, or they may not be fully prepared to manage this challenge in practice (Debozy, 2009; Xie & Huang, 2014).

Figure 13 summarises the perceived connections between the *Motivation* theme, other *MAC-ICE* themes, and online student outcomes. Shown on the left, all *MAC-ICE* themes were perceived to contribute to one or more *Motivation* sub-theme. Students' *Ability* may play a role in students' *concentration*, *self-efficacy* and *interest and passion*, while *Circumstances* may contribute to students' *concentration*, *commitment* and *interest and passion*. Institutional *Interaction* may inform students' *concentration*, *commitment*, *self-efficacy* and *interest and passion*; *Curriculum* may inform *concentration*, *commitment* and *interest and passion*; and *Environment* may inform students' *concentration*. The *Motivation* sub-themes may

also be somewhat interconnected, with particular aspects of students' motivation contributing to other aspects of their motivation (e.g., *commitment* contributing to *concentration*).

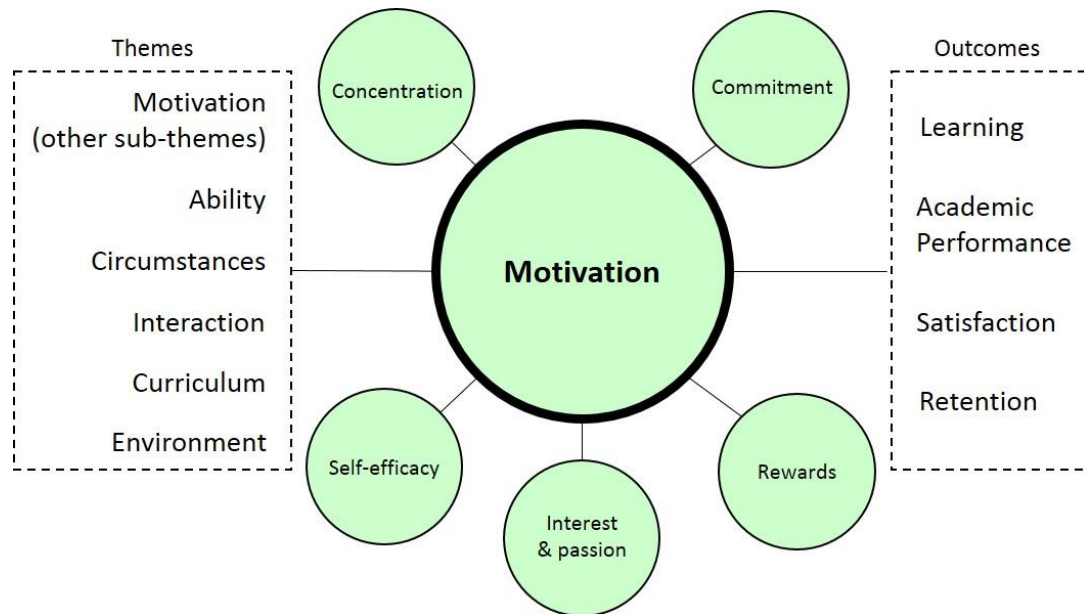


Figure 13. The perceived connections between the *Motivation* theme; other *MAC-ICE* themes (left); and online student outcomes (right).

Students' *Motivation* may subsequently play an important role in the perceived quality of their OSE. *Motivation* may inform online students' learning, academic performance, satisfaction and retention; as shown by the outcomes listed on the right in Figure 13. Effective *concentration* enables students to learn more deeply, while poor concentration pushes students towards shallow learning strategies, resulting in less effective learning (Debozy, 2009; Xie & Huang, 2014). Poor *concentration* also affects students' ability to produce work of a high quality, jeopardising their academic performance (Waschull, 2005). Where students overcome challenges associated with their *concentration*; are highly *committed* to their studies; feel confident they can succeed (*self-efficacy*); hold a deep *interest and passion* for their studies; and experience personal, intellectual, professional or social *rewards*, however, they feel proud of their accomplishments and satisfied with their OSE (Chen et al., 2017; Chiu et al., 2007; Palmer & Holt, 2009; Shen et al., 2013). A strong *commitment* to their course, and associated goals, also encourages students to persist with their studies (Kember, 1989; Lau, 2003).

## Ability

Participants identified their ability as an important component of their lived experiences of OE, and the quality of their OSE. For the purpose of the present research, *Ability* referred to students' self-assessed competence in particular skills or activities, which they associated with online and/or university education. That is, the skills, knowledge and experience, which students brought with them, and which were subsequently utilised and developed during their course. The expectations, experiences and outcomes described by students in relation to their *Ability*, incorporated their *academic skills*, *computer literacy*, *content knowledge*, *organisation and time management*, and *self-regulation*, as illustrated in Figure 14. As for *Motivation*, each *Ability* sub-theme is introduced below and discussed in the context of corresponding expectations, experiences and outcomes. The connections between each sub-theme and other *MAC-ICE* themes, and the perceived contribution of each *Ability* sub-theme to online students' outcomes, are then summarised.

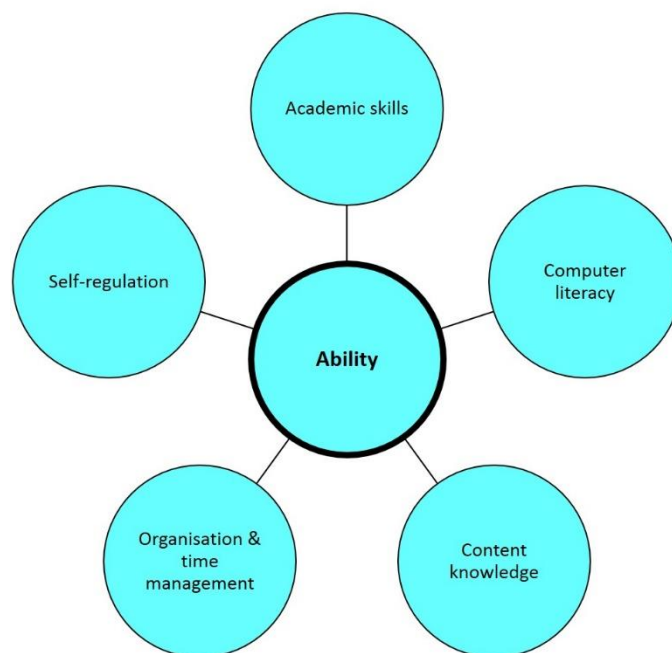


Figure 14. The *Ability* theme, incorporating sub-themes of *academic skills*, *computer literacy*, *content knowledge*, *organisation and time management*, and *self-regulation*.



## **Academic skills**

The *academic skills* required to interpret and participate in university learning activities formed an important component of the *Ability* theme, and of students' lived experiences of OE. As in previous sections, students' expectations and experiences of *academic skills* are discussed in detail below. Other *MAC-ICE* themes described to have contributed to students' academic skills are also examined, before discussing the perceived contribution of academic skills to online students' outcomes. The lived experience of *academic skills*, and its perceived connection to other experiences and online student outcomes, are then summarised.

### ***Expectations of academic skills***

Students anticipated having strong academic skills would be important. They expected to need to understand and use academic language, and to think critically. Students were mindful of potential gaps in their study skills or experience, nonetheless. Janice, for instance, described feeling apprehensive about her academic skills, as she commenced her course:

*My biggest concerns are academic language.*

Students expected prior academic experience would be valuable. Less experienced students were concerned they may be insufficiently skilled in techniques such as critical thinking and academic writing, particularly if they were returning to study after a long time. In contrast, students who had recently developed and applied skills in an academic setting felt they were at an advantage. Katie, for instance, described expecting her personal and academic experience would give her a head start in her studies:

*I'm hoping life experience and previous study experience will be a bonus.*

Students expected to develop their academic skills during their course. They anticipated a substantial learning curve at first, as they acquire the skills to participate and perform at university level. Students expected experience and feedback would allow them to identify areas in which to improve. As they progressed, they would develop their skills to a level that would enable them to focus

more on the content itself. Yakira, for instance, described expecting to develop her skills in assignment writing, as she settled into her course:

*I think to start with I might struggle a little bit as I get used to assessments again. But hopefully when that comes back to me I think I will do well.*

### ***Experiences of academic skills***

During their course, students struggled to adapt to university learning. They found it difficult to understand and meet the academic standards expected of them, particularly in terms of referencing, critical thinking, information literacy and using academic language. While they had anticipated being challenged by academic aspects of their studies, these appeared more substantial or complex than initially thought.

As they expected, less academically experienced students felt they were at a disadvantage. Students felt overwhelmed and stressed by the effort required to learn and apply new academic skills, on top of participating in the course itself. Andrea, for instance, described realising the academic standards expected of her in her second semester were higher than anticipated:

*I knew it was going to be hard but I thought I would breeze through it like senior high school :) a little naive.*

As they progressed, students began to understand what was required and increasingly developed the skills necessary to engage effectively with their studies. By the end of their first year, students had acknowledged problems with their academic skills and actively sought to address weaknesses, or adjusted their personal expectations to account for potential shortfalls. Having developed their academic skills, students felt better prepared for future semesters. They expected their skills would continue to develop, but the learning curve would begin to slow, enabling them to engage more efficiently in learning activities, as described by Valentina in her second semester:

*I think you get a little more understanding of what is expected of you each semester ... I think you grow as you go.*

### ***Contributions to academic skills***

Students described several factors having contributed to their development of academic skills, corresponding to a number of other *MAC-ICE* themes. Students' *Circumstances*, including *peripheral support*, strengthened their academic skills. Assistance and support from significant others and University services helped students address weaknesses and build their academic skills. Justin, for instance, described the help he received from a Learning Advisor during his first semester:

*I didn't understand ACADEMIC WRITING. It wasn't too hard after that, she got me pointed in the right direction thanks to her.*

*Interaction* with *instructors* was also described to have strengthened students' academic skills. Meaningful feedback and encouragement from instructors helped students identify and address weaknesses, enabling them to develop their academic ability further. Andrea, for instance, described assistance from an instructor having helped her develop her skills during her first semester:

*Once the lecturer pointed out all my mistakes then I realised where I needed to improve.*

### ***Outcomes of academic skills***

Following their first and second semesters, students described their academic skills as having influenced the perceived quality of their OSE. Inexperience and unclear expectations of what was required for university-level performance, influenced students' capacity to interpret and address assessment criteria, resulting in lower grades. A lack of prior university experience, as well as uncertainty of what was required to earn high marks, limited students' performance, especially in early assignments. They found the standards of performance much higher than secondary school, and struggled to follow assignment instructions. In particular, students found it difficult to grasp what was required in terms of 'critical appraisal' and 'supporting

evidence'. Stephen, for instance, described his confusion in interpreting instructions for a first semester assignment:

*I did get a low mark on one. It asked for our opinion, I gave it, and got marked down for giving an opinion :)*

### ***Academic skills summary***

Participants' experiences suggest students' lived experiences of OE, and the perceived quality of their OSE, were influenced by their academic skills. Students were confident in their academic ability upon commencing an online course, yet aware of potential weaknesses (Barron & D'Annunzio-Green, 2009; Decker & Beltran, 2015). Some underestimated the standards expected of them, or the level of skills required, however, which resulted in a stressful learning curve during their first semester (Colclough, Kimmins, Harmes, & Henderson, 2011; Trekles Milligan & Buckenmeyer, 2008). The diversity in skills and experience at commencement, furthermore, suggests some students may struggle substantially more, and have substantially more to learn, than others, at least initially (Kift & Nelson, 2005; Trekles Milligan & Buckenmeyer, 2008; Trentin, 2002). Students may accurately predict prior experience and academic skills to be advantageous in their course, furthermore, though may underestimate the standard of work required. Online first-year students may not fully appreciate the academic skills required, therefore, or may lack sufficient preparation to cope with university-level assessments (Boud, 2010; Colclough et al., 2011; Trekles Milligan & Buckenmeyer, 2008).

Participants' lived experiences of *academic skills* are summarised in Figure 15. Themes perceived to have contributed to academic skills are shown to the left, and online student outcomes described to have been influenced by academic skills, to the right. With meaningful feedback (*Interaction*) from *instructors* and (*peripheral*) *support* from significant others and academic services (*Circumstances*), online students may identify weaknesses and actively develop their academic skills (Boud, 2010; Chen & Jang, 2010; Crosling et al., 2009).

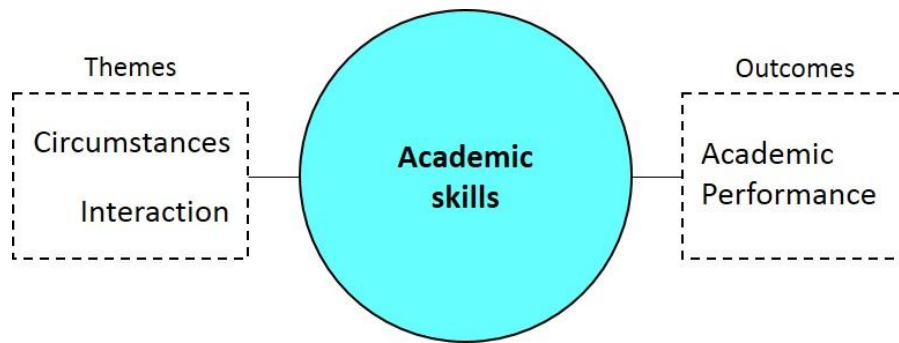


Figure 15. The perceived connections between *academic skills*, other *MAC-ICE* themes (left), and online student outcomes (right).

Where online students possess the necessary academic skills, the perceived quality of their OSE may be enhanced. In particular, strong academic skills and experience may contribute to online students' performance (Cavanaugh & Jacquemin, 2015; Hachey et al., 2012). Experienced students, who commence with strong academic skills, may be equipped to perform well in their online course, while those with less experience may struggle to understand assessment requirements, and perform poorly as a result.

### **Computer literacy**

In addition to *academic skills*, students' *computer literacy* was described as an important *Ability*, contributing to their lived experiences of OE. Students' expectations and experiences of *computer literacy*, contributing *MAC-ICE* themes, and the perceived contribution of computer literacy to online students' outcomes, are discussed in detail below. The lived experience of *computer literacy*, and its perceived connection to other experiences and online student outcomes, are then summarised.

### ***Expectations of computer literacy***

Students expected technical skills would be essential to access and participate in online learning activities. Students who had used computers in their work and personal lives, expected this experience would transfer to OE, enabling them to participate effectively in the online environment. Gabriel, for instance, described expecting his experience with technology would position him well in his studies:

*That is one area I have no concern with at this point. I use technology daily and don't foresee a problem.*

Some students felt less technically proficient or experienced. These students were concerned their inexperience might impact their participation, and worried they might miss important information if they could not effectively navigate the online environment. Students anticipated they would likely experience a substantial learning curve initially, learning to navigate online environments and use required software, alongside developing their academic skills (see *Academic skills*, page 143) and learning course content. Students consistently expected, nonetheless, that technical aspects would become easier as they became more familiar with OE. Katie, for instance, described expecting the reliance on technology would be challenging at first, but would become easier as she became more familiar with the online learning and enrolment systems:

*I expect to get frustrated until I find my way around [the online enrolment system] properly ... I'll need extra time at first to help me navigate my way round.*

### ***Experiences of computer literacy***

During the course, students struggled to adapt to some technical requirements. As students expected, those with limited experience with computers, found this to generate a very steep learning curve, which affected their capacity to keep up with their studies. In addition, while anticipated, students had not fully appreciated the extent of the reliance on technology, or the use of particular systems/software, such as social networking tools, and found this stressful. Justin, for instance, described his shock at realising technical weaknesses during his first semester:

*To put it mildly BLODDY [sic] HARD ... I did find the course if you were computer literate, ok, but I wasn't.*

### ***Contributions to computer literacy***

Students' *Circumstances* contributed to their development of computer literacy during their course. *Peripheral support* from significant others, such as family members, friends, and colleagues who were more experienced with technology; as well as University technical support services, helped students navigate their online environment. Eliza, for instance, described the help she received from a friend and University services in learning to use required systems during her first semester:

*My friend did a teaching degree on line so she brought me up to scratch with technology! The IT dept helped with a couple of technical issues.*

### ***Computer literacy summary***

Participants' experiences suggest students' lived experiences of OE were influenced by their computer literacy. Students were aware technical skills are important for OE, yet did not fully appreciate the extent of the reliance on technology, or overestimated their own skills in this area (Shen et al., 2013; Trekles Milligan & Buckenmeyer, 2008). Inexperience or weak computer literacy resulted in a substantial learning curve, which created additional stress (Packham et al., 2004; Shen et al., 2013; Tomas et al., 2015). Computer literacy, however, was not explicitly described to have directly contributed to any online student outcomes.

Participants lived experiences of *computer literacy* are summarised in Figure 16. Themes perceived to have contributed to students' computer literacy, namely *Circumstances*, are shown to the left. *Peripheral support* from knowledgeable and experienced others, in particular, may assist students to develop their computer literacy. Again, the diversity in technical skills and experience at commencement, nonetheless, suggests some students may face additional challenges, and have substantially more to learn, than others, during their first year of OE (Kift & Nelson, 2005; Trekles Milligan & Buckenmeyer, 2008; Trentin, 2002). While the challenges associated with students' computer literacy appeared to cause substantial stress, particularly during their first semester, computer literacy was not explicitly described to have directly influenced the perceived quality of the OSE.

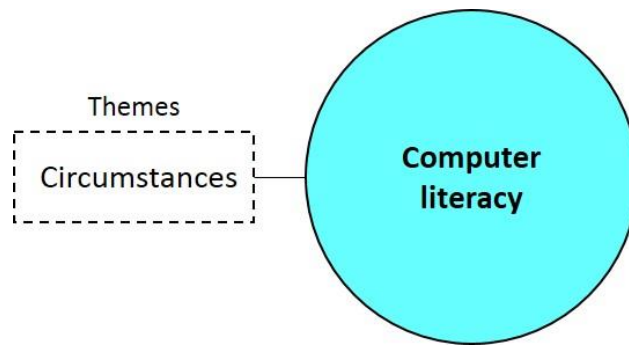


Figure 16. The perceived connection between *computer literacy* and other *MAC-ICE* themes (left).

### **Content knowledge**

Alongside academic and technical skills, students' prior (pre-commencement) *content knowledge* formed an important component of *Ability*, and of students' lived experiences of OE. Students' expectations and experiences of *content knowledge*, and perceived influences of content knowledge on online students' outcomes, are discussed below. As this sub-theme related to students' knowledge *prior* to commencing, other *MAC-ICE* themes perceived to have influenced content knowledge during the online course were interpreted as related to the overall outcome of learning, and not coded against this sub-theme.

#### ***Expectations of content knowledge***

Students anticipated they might struggle with less familiar topics in their online course, particularly mathematical content. They expected to be at some advantage, however, where they were familiar with course subject matter through personal experience, prior learning, or having worked in a related field. Students anticipated this prior knowledge would help them recognise and understand related concepts, and make it easier to learn new aspects of that topic. John, for instance, described expecting his work experience to be valuable for his studies:

*I hope to do well being the course is very much what I do day to day in my work.*



### ***Experiences of content knowledge***

As anticipated, prior knowledge of particular subject matter influenced students' understanding of associated content during their course. Where students lacked deep understanding of applicable content, particularly mathematics, they found this to be especially challenging. In contrast, students found it easier to relate and understand topics where they had prior exposure to these through personal experience, prior study or employment. Prior content knowledge allowed students to focus on other, more challenging aspects of their experience. Zander, for instance, described his prior knowledge having benefitted him during his first semester:

*It helps a lot that I'm very experienced in my field.*

As students progressed, the benefits of their initial content knowledge began to drop off. Though valuable during their first semester, prior knowledge only influenced a small part of their experience. By their second semester, students no longer spoke explicitly of any advantage offered by pre-commencement content familiarity, suggesting they now felt on par with other students, who may not have had the same level of prior knowledge.

### ***Outcomes of content knowledge***

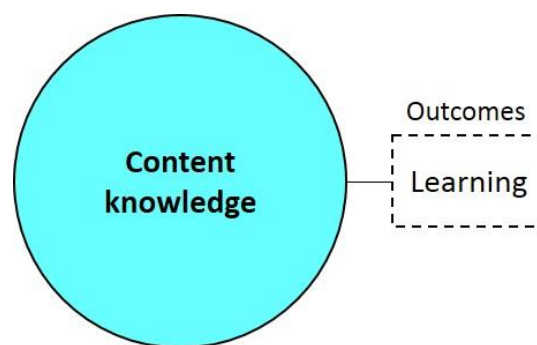
Following their first and second semesters, students described their pre-commencement content knowledge as contributing to the perceived quality of their OSE. Prior understanding of course content helped students learn more about associated topics. Where they were familiar with topics, students found they were better able to understand related content, giving them an advantage over other students. In some cases, however, content familiarity meant these students did not have the opportunity to acquire substantial *new* knowledge, as described by Kevin after his first year:

*I already knew the prep stuff so didn't really learn either that much.*

### ***Content knowledge summary***

Participants' responses suggest students' lived experiences of OE, especially in their first semester, and the perceived quality of their OSE, were influenced by their pre-commencement content knowledge (Lesgold, 2004; Wang, 2009). Limited prior knowledge of mathematics, in particular, was a significant concern for students (Antonis et al., 2011; Ashcraft & Krause, 2007). Strong prior knowledge, on the other hand, formed a helpful base upon which students were able to extend their knowledge during their course, placing them at a perceived advantage compared to less experienced peers. The impact of low familiarity with course subject matter may, nonetheless, diminish as students progress and build upon their knowledge during their online course.

Participants' lived experiences of *content knowledge* are summarised in Figure 17. The right hand box shows that online students' content knowledge may contribute to their learning (Terry, de La Harpe, & Kontur, 2016; Wang, 2009; Xu & Jaggars, 2011). Where they already possess substantial expertise, however, some students may also feel they do not have the opportunity to acquire sufficient *new* knowledge. As this sub-theme related to knowledge *prior* to commencing, furthermore, other *MAC-ICE* themes reported to have influenced content knowledge *during* the online course were interpreted as related to the overall outcome of learning, and, therefore, not applicable to this sub-theme.



*Figure 17.* The perceived connection between *content knowledge* and online student outcomes (right).

## **Organisation and time management**

Students' *organisation and time management* contributed to their *Ability*, and their lived experiences of OE. Students' expectations and experiences of *organisation and time management* are discussed in detail below, with contributing themes examined, before discussing the perceived contribution of organisation and time management to online students' outcomes. The lived experience of *organisation and time management*, and its perceived connection to other experiences and online student outcomes, are then summarised.

### ***Expectations of organisation and time management***

Students were initially unsure and apprehensive about how much time their studies would require. Unsure of the precise time demands, while concerned about their skills and the anticipated learning curve upon commencing; students were nervous of their capacity to devote the necessary time to their studies. They worried they may not be able to stay on top of their workload and might fall behind. Students acknowledged that if they were unable to devote the amount of time required, or were unable to plan and manage their time efficiently, they may become stressed; and their ability to keep up, and/or to meet required standards, could be affected. Samiyah, for instance, described expecting she would need to plan and manage her workload well during her course:

*I hope it won't be full on and I can't keep up with it ... think I will go ok as long as I plan myself well.*

### ***Experiences of organisation and time management***

Upon commencing, students described their course requiring substantially more time than anticipated. Some also acknowledged they did not manage their time as well as they had hoped. Students struggled to plan their work around other expected and unexpected commitments (see also *Simultaneous priorities*, page 167), assignment deadlines, and a demanding workload. They needed to be flexible in managing their time, adapting to fluctuating workloads associated with assignments; and were not always able to allocate sufficient time during busier periods. Alana, for

instance, described realising she had significantly underestimated the time required for her first year:

*Not realistic at all! I totally underestimated the time I would need to devote to study.*

For some, their workload felt overwhelming. Unable to dedicate the necessary time to complete activities effectively, students became stressed. Where they fell behind, students also found it difficult to make up for lost time. In some cases, students were able to obtain assignment extensions; however, this condensed the time available to prepare for subsequent assessments, and did not fully enable them to catch up. Ruby, for instance, described falling behind during her first semester, despite receiving an extension:

*Because I got an extension on my first assignment I ended up behind on my second.*

With experience, students acknowledged they needed to organise themselves better and purposefully allocate time for study, in order to manage their workload and satisfy other (non-study) commitments. Students recognised their time management was essential and adjusted their study load or personal circumstances, where they found their availability problematic. Students actively prioritised tasks, planned their workload, spent time preparing, and started assignments earlier. Recognising the importance of being organised, students expected to be better prepared for future semesters. Eliza, for instance, described how she adapted her approach during her second semester, resulting in more effective time management:

*I started [assignments] earlier this time round so didn't have any major late nights or stresses ... I read virtually everything I could before I started and its [sic] helped me a great deal.*

### ***Contributions to organisation and time management***

Several factors were described to have contributed to students' organisation and time management, corresponding to a number of other *MAC-ICE* themes. Firstly, students' *Motivation*, specifically poor *concentration*, reduced the efficiency

of students' study, increasing the time required for learning activities. Gabriel, for instance, described the influence of procrastination on his time management during his first semester:

*I think that I procrastinated too much instead of just relaxing and taking things in small parts and one at a time.*

Other *Abilities* also contributed to students' organisation and time management. Students with less *content knowledge* faced a steep learning curve; and less experienced students needed to develop their *academic skills* and *computer literacy* quickly, on top of learning course content, increasing their workload. Poor *self-regulation* also reduced students' capacity to plan and manage their studies to suit their learning needs. Strong *self-regulation*, on the other hand, helped students organise their time to suit their learning needs; while strong *academic skills*, *computer literacy* and *content knowledge* helped students work more efficiently. Samantha, for instance, described her content familiarity affecting how much time her learning activities required during her second semester:

*Different things took longer or shorter, depending on how much prior understanding had.*

Students' *Circumstances* also contributed to their organisation and time management. Accommodations and support from significant others and employers (*peripheral support*) facilitated students' availability for study. In contrast, competing (*simultaneous*) *priorities* and poor *health* reduced students' availability; affecting their capacity to plan and manage their time. Annette, for instance, described how interruptions during her first semester influenced her time management:

*I had a routine that I stuck to, but if the kids woke up or someone rang then my routine and schedule would be blown out.*

Students' organisation and time management was influenced by their *Interaction* with *instructors*, *peers* and *course content*. Irregular, limited or vague guidance from instructors, along with a reliance on other students for group

assessments, reduced students' capacity to plan and manage their time effectively. Reading and contributing to discussion board threads was also especially time consuming. Brenda, for instance, described the influence of delayed instructions on her organisation during her second semester:

*You cant [sic] always start [assignments] early as you are waiting for information.*

In addition, the *Curriculum* contributed to students' organisation and time management. A *flexible* pace enabled students to organise their studies around their availability. Less *challenging* content further allowed students to work quickly, keeping their workload manageable. A flexible structure, nonetheless, also placed greater onus on students to manage their own time, while an overly defined (inflexible) pace of learning and compulsory synchronous activities, reduced students' control over their time. Difficult content, furthermore, took students longer to absorb. Martin, for instance described course difficulty requiring him to commit more time in his first semester, than anticipated:

*Its [sic] been a bit difficult more work than I expected.*

Finally, the *Environment* contributed to students' organisation and time management. Reliable, innovative and helpful *technology* enabled students to work efficiently. Technical difficulties, on the other hand, caused substantial delays for students, adding to the time demands of their course. Samantha, for instance, described how connection difficulties delayed her assignment preparation during her second semester:

*Did get everything done in time, just, but could of [sic] used that lost time to do better or check over that assignment an extra time.*

### ***Outcomes of organisation and time management***

Following their first and second semesters, students described their organisation and time management to have contributed to the perceived quality of their OSE. Where they underestimated the time required, or their availability, students found it difficult to fit everything in. Difficulties organising their

participation, time pressures, and a lack of preparation or forethought, lead to poorer results. Poor organisation condensed the time available for students to address assessment criteria fully, resulting in lower grades, particularly during students' first semester, as described by Samiyah:

*I maybe wasn't able to allocate my time the way I should have. I just expected it was going to be alright [sic].*

Where students fell behind in their course, they also contemplated withdrawing. The impact of poor time management and disorganisation snowballed, making it difficult for students to catch up, and/or to regain full control of their participation. As a result, students felt overwhelmed, and some elected to reduce their study load in order to better cope with their workload; or considered withdrawing from their course altogether. Gabriel, for instance, described having contemplated withdrawing from his course due to poor time management during his first semester:

*There were times where I was so close to throwing the towel in, and it wasn't due to the course or unit difficulty as such, more that I didn't plan things correctly.*

### ***Organisation and time management summary***

The above experiences suggest students' lived experiences of OE, and the perceived quality of their OSE, were influenced by students' organisation and time management. OE required students to plan and manage their time well (Anderson, 2008; Case & Davidson, 2011; Mason, Barnes, & Shelton, 2015). Students were unsure of, or underestimated, the workload associated with their course and the amount of time they would need for their studies, however, or overestimated their availability (Alexander et al., 2003; Antonis et al., 2011; Huang et al., 2011). Where online students were unable to effectively plan and manage their time, they became stressed, fell behind, and were unable to overcome lost time.

Figure 18 summarises the perceived connections between *organisation and time management* and other *MAC-ICE* themes (left), as well as the online student

outcomes influenced by this organisation and time management (right). Where students *concentrate* well (*Motivation*); have strong *academic skills, computer literacy, content knowledge* and *self-regulation* (*Ability*); receive *support* and accommodations from family/employers, are *healthy* and able to manage *simultaneous priorities* (Circumstances; Chen & Jang, 2010; Stone, 2017), they may be well placed to learn efficiently, and allocate sufficient time to their studies. Supplementing this, an OSE that offers timely *Interaction* with *instructors*, *interactive content* and manageable *peer interaction*; some *flexibility* and a manageable *challenge* (Curriculum; Stone, 2017); and access to reliable and innovative *technology* (*Environment*; Tomas et al., 2015), may facilitate a more wieldy workload.

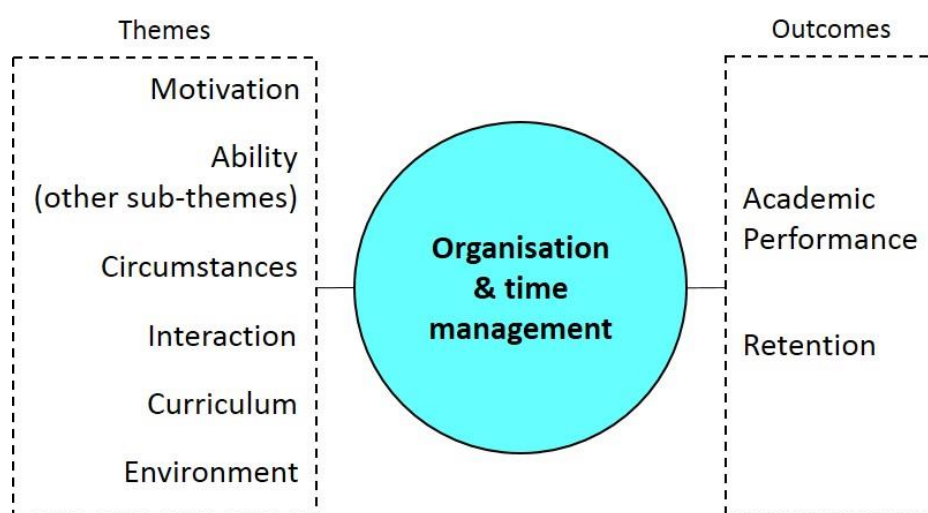


Figure 18. The perceived connections between *organisation and time management*, other *MAC-ICE* themes, and online student outcomes.

Students' ability to plan and manage their time well may subsequently influence the perceived quality of their OSE. Where students do not organise their workload and manage their time well, their performance in an online course may be jeopardised (Mason et al., 2015; Waschull, 2005). If students fall behind, they may also be prevented from returning to a strong position, and/or unable to avoid substantial impacts to their performance as a result. Where students do not manage their time effectively and begin to fall behind, they may also choose to withdraw from some units in order to reduce their workload, or consider withdrawing from



their course altogether (Kim & Frick, 2011; Kramer & Bohrs, 2016; Packham et al., 2004).

### **Self-regulation**

Online students' *Ability*, and their lived experiences of OE, were influenced by their *self-regulation*. Students' expectations and experiences of *self-regulation*, contributing themes, and the perceived influence of self-regulation on online students' outcomes, are discussed below. The lived experience of *self-regulation*, and its perceived connection to other experiences and online student outcomes, are then summarised.

#### ***Expectations of self-regulation***

Prior to commencing, students expected to play an important role in directing, managing and stimulating their own learning. They expected to learn at their own pace; reading materials and working through activities at their leisure, and completing assignments by set deadlines. Some were particularly enticed by this idea of managing their own participation, offering an opportunity to learn when and how they chose. Others worried they might become lazy or disorganised in the absence of imposed requirements for regular participation. Julie, for instance, described expecting to take primary responsibility for her own participation:

*The attendance is up to me personally as you can access it 24/7 ...*

*Accessing online lectures in my own time ... basically its [sic] up to me.*

Students acknowledged that in the absence of requirements to be at a particular place, at a particular time, and being less visible to instructors or peers, there might be fewer external prompts for their participation. Distanced from instructors, students were concerned about receiving pre-emptive assistance if they wandered off track. They worried instructors may not notice or proactively advise if students did not grasp concepts accurately, and might be less available to assist if students were struggling. Consequently, students anticipated OE would likely require them to take a proactive role in seeking assistance, rather than waiting for instructors

to intervene. Brooke, for instance, described expecting OE may require her to be more assertive:

*I think the distance will be a challenge as I am not generally good at pushing a point if I have a concern and may sit back and wait.*

### ***Experiences of self-regulation***

Students described their experience to require even more self-regulation than expected. While some units involved regular activities and contact with instructors, many had highly flexible structures requiring students to direct and manage all participation (see also *Flexibility*, page 214). Some students appreciated this freedom to work at a personally appropriate and comfortable pace, as they anticipated, with the flexibility to focus on aspects most relevant or interesting to them. Others felt neglected by the University, having to take responsibility for obtaining relevant information and resources. These students struggled in the absence of regular guidance and feedback from instructors, concerned they may be off-track or have missed important information (see also *Instructor interaction*, page 194). Catherine, for instance, described feeling overwhelmed by the extent of self-regulation required, and her concerns this may have affected her understanding during her first semester:

*I think I was quite overwhelmed to begin with trying to work everything out on my own, and feeling worried that I had missed something important.*

With experience, students increasingly recognised the need to take greater responsibility for their own participation, and to be proactive in seeking assistance, accepting greater ownership for directing and managing their participation. They actively sought out further information to clarify and grow their knowledge, by approaching other students or support services, and actively researching relevant literature. Students recognised a need to be more proactive in contacting instructors whenever they did not fully understand a concept or task. They learned not to assume everything would resolve itself, instead accepting the need to clarify doubts as early as possible. Students learned to be timely in requesting assistance from instructors, acknowledging they may not get immediate responses and this could

cause further delays. Nonetheless, learning at their own pace encouraged students to develop their time management and research skills, and minimised potential delays or inconveniences associated with having to work at the same pace as other students. Students needed to be proactive in seeking out information and feedback, and to take greater responsibility for their participation, as described by Andrea following her second semester:

*I think its [sic] already helping with my research skills. Because you dont [sic] always get answers back straight away I tend to find the answers myself from doing harder research.*

### ***Contributions to self-regulation***

Students described several factors as having contributed to their self-regulation, corresponding to a number of other *MAC-ICE* themes. Firstly, *Interaction* with *instructors* and *peers* influenced students' self-regulation. Guidance and feedback from instructors helped students understand how to direct and adapt their actions to meet learning activity requirements. Vague, unhelpful, or a lack of communication from instructors, however, limited students' understanding of how they should approach their study, while reliance on others for group assignments reduced students' capacity to control their own participation. Brooke, for instance, described the lack of feedback from her instructor affecting her ability to prepare for her first semester exam:

*No feedback, no contact ... I had no results for my assignments until a few days before my exam ... It was frustrating.*

The *Curriculum* also contributed to students' self-regulation. A *flexible* pace of learning enabled students to freely direct and adapt their actions to meet learning activity requirements. A defined pace of learning, with synchronous participation requirements, however, limited students' capacity to self-regulate. Brenda, for instance, described the degree of flexibility provided in different units influencing her capacity to manage and direct her participation during her second semester:

*I hate that you have to do it week by week in line with internal students, one external unit in first semester put up 5 weeks in the first week and it was great, you could get in front and then relax and do it at your own pace.*

Finally, the *Environment* contributed to students' self-regulation. *Online delivery* was perceived to place significant onus on students to direct and adapt their own actions to meet learning activity requirements, in the absence of overt social cues. Unreliable *technology* further prevented students from engaging in learning activities in preferred ways, and at preferred times. Gabriel, for instance, described difficulties accessing the information necessary to guide his participation when the LMS was down during his second semester:

*BlackBoard went down near the date one was due so this was difficult becuae I needed to find other means of getting the information I needed.*

### ***Self-regulation summary***

The above descriptions suggest students' lived experiences of OE were influenced by their ability to self-regulate participation. Students anticipated, though somewhat underestimated, the role they would play in regulating their own learning. OE required students to take substantial responsibility for directing their participation, and to be proactive and timely in seeking support, in the absence of overt cues and instant feedback (Ali, Hodson-Carlton, & Ryan, 2004; Almala, 2005; Serhan, 2010).

Figure 19 summarises the perceived connections between *self-regulation* and other *MAC-ICE* themes (left), as well as the online student outcomes influenced by this self-regulation (right). During their first year, students' self-regulation may be influenced by *instructor interaction* and reliance on *peer* contributions (*Interaction*); *Curriculum flexibility* (Stone, 2017); and *online delivery* conditions and *technology* (*Environment*; Heaton-Shrestha, May, & Burke, 2009; Nonis & Fenner, 2011; Tomas et al., 2015). While self-regulation was an important aspect of students' lived experiences of OE, it was not explicitly described to have directly contributed to the perceived quality of students' OSE. Self-directed learning may facilitate and enable

students to be flexible in adapting their study practices to meet their learning needs and circumstances, nonetheless, and may encourage development of good time management and research skills (Brooks, 2009; Griffin et al., 2013).

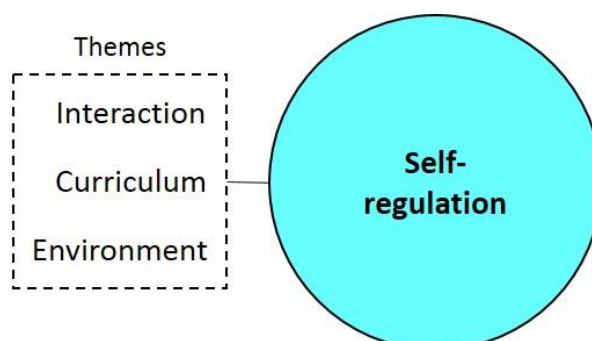


Figure 19. The perceived connection between *self-regulation* and other *MAC-ICE* themes (left).

### Ability and the Online Student Experience

Participants' experiences show students' perceived competence in particular skills and activities upon commencing an online course can inform their lived experiences of OE, and the perceived quality of their OSE. Strong *organisational* skills and self-discipline may be essential to managing the demands of OE. Students may be unsure of how much time they will need to dedicate to their studies, or substantially underestimate this, however, which can prevent them from allocating their time effectively (Alexander et al., 2003; Antonis et al., 2011; Scutter et al., 2011). It is not surprising students who anticipate only a small amount of time to be required, might expect to complete their studies alongside substantial work or family commitments (see also *Simultaneous priorities*, page 167). Consequently, these students may struggle to dedicate sufficient time for their studies. Students anticipate these organisational challenges, yet may not be sufficiently prepared by this knowledge alone. Instead, delays can snowball, with students struggling to make up for lost time. Self-discipline may be essential in overcoming this challenge, and ensuring online students' are able to use what time they have effectively (Case & Davidson, 2011; Griffin et al., 2013; Waschull, 2005).

Online students play an important role in directing, managing and stimulating their own participation (Ali et al., 2004; Almala, 2005; Serhan, 2010). They may

struggle with *self-regulation* at first, but with experience, learn to be proactive in seeking feedback and clarification, and to allow for potential delays in receiving responses. Though some may embrace the added challenge of directing their own learning, it is clear participants felt this added responsibility meant they did not have it easy. It is also conceivable students who did not actively discuss their self-regulation may not have seen this as a necessary skill, instead relying solely on information provided by instructors, which may not have always been sufficient, if one considers concerns raised about *instructor interaction* (see page 194). With some students independently researching topics to supplement limited instruction, furthermore, there may be increased propensity for confusion, and for the application of inconsistent information to result in varied learning outcomes.

Regardless of prior experience and understanding of online HE, students expect OE to involve a steep learning curve in initial semesters. Some may be surprised by the standard of work and activities expected of them, but respond by actively pushing themselves to develop the necessary skills. Where they embrace this challenge, students can develop greater proficiency and confidence in their ability to succeed (Ciampa, 2014; Sinclair, 2011). Others, however, may feel overwhelmed and stressed by the scale of learning required during their initial weeks (Daugherty & Lane, 1999; Gohn, Swartz, & Donnelly, 2000/2001). Nonetheless, as students gain experience of university and learn to use associated online systems, their confidence may increase (Richardson & Newby, 2006), and they can begin to focus more effort on other aspects of their studies.

Students expect and find their previous experience and understanding of online/academic environments (*academic skills, computer literacy*), in addition to prior *content knowledge*, provides them with some advantage during their first semester (Richardson & Newby, 2006; Shen et al., 2013; Wang, 2009). Those who have not studied for some time, on the other hand, may lack particular skills or experience, and face more severe learning curves upon commencement. While students are aware of potential challenges in embarking on a new learning experience, furthermore, they may not be adequately prepared to face these challenges. Online students can also commence with diverse skills and experience (Kift & Nelson, 2005; Trekles Milligan & Buckenmeyer, 2008; Trentin, 2002),

presenting more substantial learning curves for some students, than others. The advantages offered by prior skills, knowledge or experience, nonetheless, may diminish over time, suggesting students can make up for any initial shortcomings as they progress in their online course.

Figure 20 summarises the perceived connections between *Ability*, other *MAC-ICE* themes, and online student outcomes. The left hand box shows that all *MAC-ICE* themes were perceived to have contributed to students' ability. Students' *Motivation* may play a role in students' *organisation and time management*, while their *Circumstances* may contribute to their *academic skills*, *computer literacy*, and *organisation and time management*. Institutional *Interaction* may inform students' *academic skills*, *organisation and time management*, and *self-regulation*; and *Curriculum* and *Environment* may both inform students' *organisation and time management*, and *self-regulation*. The *Ability* sub-themes may also be somewhat interconnected, with particular abilities contributing to other abilities (e.g., *academic skills* contributing to *organisation and time management*).

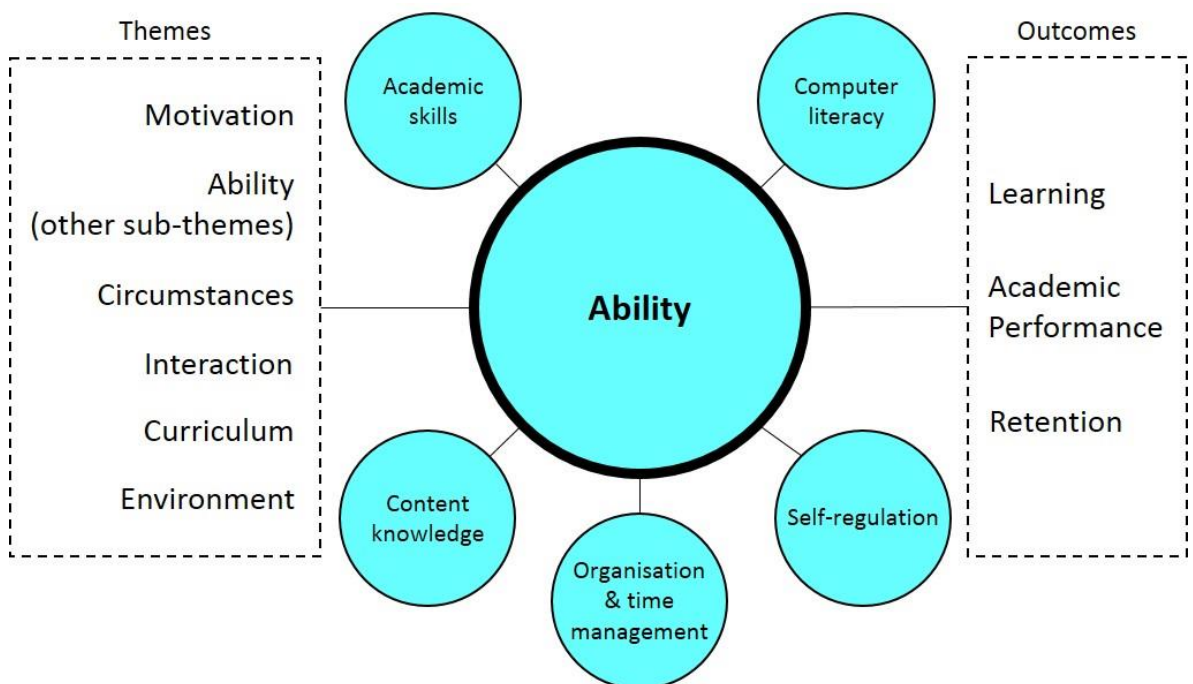


Figure 20. The perceived connections between the *Ability* theme; other *MAC-ICE* themes (left); and online student outcomes (right).

Students' *Ability* may subsequently play an important role in the perceived quality of their OSE. *Ability* may inform online students' learning, academic performance and retention. Online students' learning may be enhanced where they possess some prior *content knowledge* (Terry et al., 2016); and online students with strong *academic* and *organisational skills* may perform better in their course. Those with less *academic* experience, and poorer *time management*, on the other hand, may struggle to understand assessment requirements, and perform poorly as a result (Cavanaugh & Jacquemin, 2015; Mason et al., 2015; Waschull, 2005). Where students are unable to manage their *time* effectively and begin to fall behind, furthermore, they may choose to reduce their study load, or consider withdrawing from their course altogether (Hyllegard et al., 2008; Morgan & Tam, 1999; Packham et al., 2004).

## **Circumstances**

Participants identified the broader circumstances in which they engaged with OE as an important component of their lived experiences of OE, and the quality of their OSE. They discussed their lifestyle, and its influence on their availability and energy for study. In particular, students discussed many other demands on their time alongside study, such as work and family commitments (*simultaneous priorities*); as well as the (*peripheral*) *support* available to them outside of their course; their *health and wellbeing*; and the physical (*study*) *environment* in which they engaged with OE, as illustrated in Figure 21. Each *Circumstances* sub-theme is discussed below, before summarising the connections between each sub-theme and other *MAC-ICE* themes, and the perceived contribution of each *Circumstances* sub-theme to online students' outcomes, are then summarised.



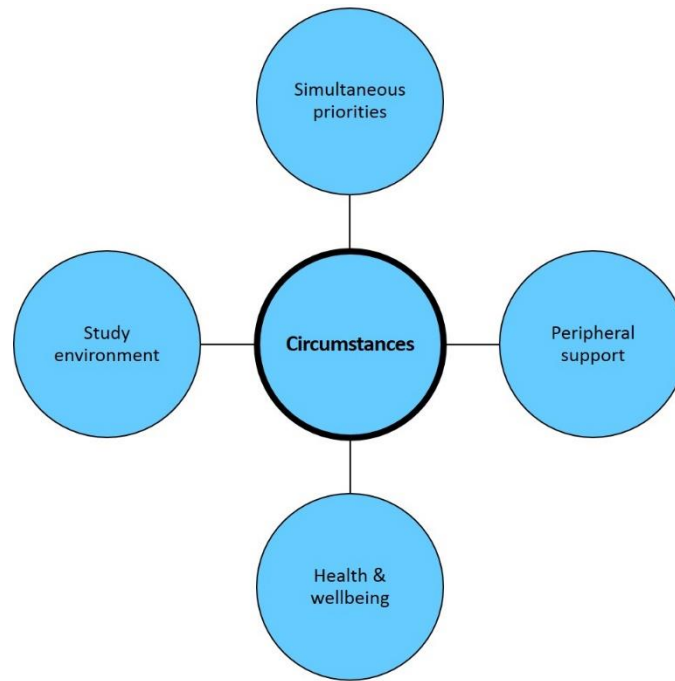


Figure 21. The *Circumstances* theme, incorporating sub-themes of *simultaneous priorities*, *peripheral support*, *health and wellbeing*, and *study environment*.

### **Simultaneous priorities**

*Simultaneous priorities* alongside students' studies formed an important component of the *Circumstances* theme, and of students' lived experiences of OE. Students' expectations and experiences of *simultaneous priorities* and contributing themes are examined below, before discussing the perceived contribution of simultaneous priorities to online students' outcomes. The lived experience of *simultaneous priorities*, and its perceived connection to other experiences and online student outcomes, are then summarised.

#### ***Expectations of simultaneous priorities***

At the time of commencing, students' responsibilities were numerous, with OE only one priority, and not necessarily their most important commitment. Many students were working full-time, and/or caring for young children. Some were full-time carers for partners or family members with disability. One student was undertaking an additional undergraduate course at another institution, alongside her

degree at the case University. In addition, maintaining the capacity to have fun, socialise, relax and exercise was important to students. Martin, for instance, described the many family responsibilities he expected to manage alongside his studies:

*The children are up and down. There are five of them all different developmental stages ... Childcare is a very major issue. My wife has been ill herself and we have had to rely on family day care but expensive.*

Students consistently expressed concern for how they would attend to their studies alongside work, family and social/personal commitments. They worried they might struggle to find time for study, and expected they would need to carefully manage any spare time. Students expected juggling multiple priorities would be challenging and rely on good time management, but this balance would be central to their success and wellbeing. It was important to students they maintain quality time with family, and continue supporting them financially, without placing undue stress on relationships. Catherine, for instance, described her concerns about maintaining her priorities and relationships, while completing her course:

*I worry that I won't be able to do everything well, being a good mum/ wife/ employee. I worry that I will be extremely stressed and not have time to exercise.*

Students expected OE would specifically enable them to accommodate other priorities. They planned to manage their time so that employment and family would not be impacted by their studies, aiming to study after work or when their children were at school, in care or asleep. Students acknowledged, nonetheless, they might not always be able to predict demands on their time. Marcus, for instance, described having chosen to study online to accommodate other commitments:

*[Learning online] means I can fit things round my work and life commitments - and golf!*

Where students viewed their studies with primacy, they anticipated needing to reprioritise and make sacrifices in other areas of their lives, to accommodate

study. They expected to have less spare time, and may need to reduce social activities to allow for study. Some students had reduced their employment, and/or arranged childcare, in anticipation of study obligations. The financial implications of reducing hours at work, and/or paying for childcare, however, was a significant consideration for students. Eva, for instance, described the sacrifices she had made in anticipation of commencing:

*I will be cutting my hours at work, so that means less money, AND I'll have less time for a social life. But I think it'll be worth it in the end so I'm okay with all of that! :)*

### ***Experiences of simultaneous priorities***

Students struggled to cope with simultaneous, and sometimes unexpected, priorities throughout their first year of OE. Though these responsibilities were anticipated, students appeared to underestimate their capacity to manage simultaneous commitments effectively. They prioritised family and caring responsibilities over study, limiting their availability and energy for study. Though they had planned to manage studies around childcare, furthermore, students had not fully anticipated the significance of unexpected caring responsibilities, or the time required for their study. When children were unwell, students had to adjust or postpone their study plans to focus on caring instead, which led them to fall behind, or to study at less optimal times. Teresa, for instance, described unexpected difficulties associated with caring for her baby while completing her first semester:

*I barely even have time to finish my assignments ... I had thought that by opting to study offcampus, it would be easier to cope with studies and a demanding baby. However, my expectations (that it would be easy) was wrong.*

Working students found it difficult to find time for study outside of work, particularly during busier work periods, which sometimes coincided with assessment deadlines. Where required, students had also not anticipated participating in scheduled activities, which limited their capacity to manage simultaneous priorities. With some students working long hours and intensive work rosters away from home,

it was difficult to participate in regular or synchronous learning activities. Some students' work situations also changed during the semester, affecting continuation of employer support for their studies, and/or their availability (see also *Peripheral support*, page 173). Aidan, for instance, described difficulties balancing a busy job and his first semester studies:

*With a 60 hour work week around exam time was rather hard to juggle.*

Students also worried their studies had taken a toll on family and relationships. They felt guilty where they were unable to spend as much time with family as desired, and worried loved ones might feel neglected. Students described having to rely on partners for family responsibilities and, in some cases, this caused partners to show resentment, reducing their support for students' study. Having many responsibilities competing for students' energy and attention made them feel stressed, overwhelmed and inept. Students sensed this stress also made them irritable. In addition, students were unable to find time for personal or social activities, and felt their lifestyle had suffered. In some cases, these challenges prompted students to adjust their employment or study arrangements to better allow time for all commitments. Brenda, for instance, described the guilt she felt balancing her family and study commitments during her first semester:

*I feel guilty if I study too much and the impact that has on my family and  
I feel guilty if I don't study and the impact that has on my grade.*

### ***Contributions to simultaneous priorities***

Students described several factors having contributed to their management of simultaneous priorities, corresponding to a number of other *MAC-ICE* themes. Other experiences of students' *Circumstances* influenced their management of priorities. Specifically, a lack of accommodations, understanding or support from significant others (*peripheral support*) reduced the priority of students' study, compared to other important commitments (e.g., employment, childcare, relationships). Strong *peripheral support*, on the other hand, assisted students to manage non-study responsibilities and commitments well. Catherine, for instance, described her mother

and friend's assistance enabling her to focus more time and effort on studying during her first semester:

*I got my mum to help me with some of the housework. Another friend (a work colleague) also offered to help with the kids and made things a bit easier.*

The *Curriculum* also contributed to students' capacity to manage simultaneous priorities. *Inflexible*, synchronous course design limited students' capacity to attend to all commitments effectively. Kevin, for instance, described the pace of his studies making it difficult to manage other commitments during his first semester:

*Most units only release there [sic] work 1 week at a time ... when I am on break I cant [sic] go ahead to get the two weeks im [sic] away out of the way.*

In addition, the *Environment* influenced students' management of simultaneous priorities. Students described having explicitly chosen to take a course *delivered online* to accommodate their many commitments, emphasising the perception of study as a lower priority. Samuel, for instance, described the ability to prioritise his family responsibilities leading him to study online:

*My degree has to fit around my family commitments.*

### ***Outcomes of simultaneous priorities***

Following their first and second semesters, students described simultaneous priorities as having influenced the perceived quality of their OSE. Students considered withdrawing from their course/unit(s) when they felt unable to cope with study alongside other commitments, particularly if their employment changed, caring/family responsibilities increased, or they felt unable to sacrifice paid employment for study. For these students, their studies were felt to interfere or compete directly with other equally important or indispensable commitments. Mitchell, for instance, described realising his need to earn money meant he was unable to continue his course beyond his second semester:

*It became clear that I wasn't going to make ends meet so Uni had to [be] shelved, for the time being anyway.*

### ***Simultaneous priorities summary***

The above descriptions suggest students' lived experiences of OE, and the perceived quality of their OSE, were influenced by simultaneous priorities. Students were not always well placed to dedicate the requisite time and effort for their studies, with many responsibilities and commitments competing for their attention (Carr, 2000; Packham et al., 2004; Promnitz & Germain, 1996). They prioritised family and work commitments over study, with online delivery viewed specifically as a means to engage in university studies alongside other commitments (Henry et al., 2014; Ilgaz & Gulbahar, 2015; Serhan, 2010; Stone et al., 2016). Students underestimated their capacity to manage all priorities, however, causing considerable stress (Packham et al., 2004; Reynolds, 2011). Competing priorities jeopardised participation in OE, affecting students' wellbeing and relationships. Synchronous learning activities were also problematic for online students to manage alongside other inflexible commitments. Changes to a students' work or family situation, furthermore, influenced students' availability and capacity for study (Packham et al., 2004; Promnitz & Germain, 1996; Wintre et al., 2006), and students were forced to adjust their work, family or study situation to manage all demands on their time effectively.

Figure 22 summarises the perceived connections between *simultaneous priorities* and other *MAC-ICE* themes (left), as well as the online student outcomes influenced by these simultaneous priorities. Online students' capacity to manage simultaneous priorities during their first year, may be influenced by *peripheral support (Circumstances)*, *Curriculum flexibility* (Carr, 2000; Serhan, 2010; Stone et al., 2016), and/or the conditions associated with *online delivery (Environment)*. Where online students struggle to manage simultaneous priorities, the perceived quality of their OSE may be jeopardised. While students may anticipate simultaneous priorities will be challenging, they may underestimate difficulties meeting all demands for their time, and/or the potential for other priorities to interfere with their studies, and vice versa. Unable to effectively balance these

priorities, online students may elect to reduce their study load, or withdraw altogether, reprioritising their efforts on their most important commitments (Kember, 1989; Moore & Greenland, 2017; Packham et al., 2004; Promnitz & Germain, 1996).

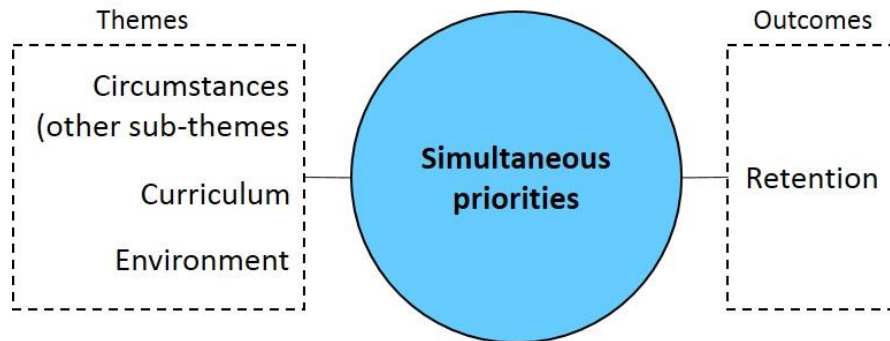


Figure 22. The perceived connections between *simultaneous priorities*, other MAC-ICE themes (left), and online student outcomes (right).

### Peripheral support

*Support* from significant others (family, friends and work colleagues) and University services formed important *Circumstances* that contributed to students' lived experiences of OE. Students' expectations and experiences of *peripheral support*, contributing, and the perceived contribution of peripheral support to online students' outcomes, is discussed below. A summary of the lived experience of *peripheral support*, and its perceived connection to other experiences and online student outcomes, is then presented.

### *Expectations of peripheral support*

Students expected to be encouraged by significant others, who would support them emotionally and practically. Students felt their families were supportive of their decisions to enrol, and continued encouragement from loved ones would be important. They hoped to receive assistance with family responsibilities and household chores; with family members caring for children during busier study periods, or affording students time and space to concentrate on assessments. Students expected family and friends would be understanding and respectful of their study commitment and its importance. Martha, for instance, described her expectations of family support and accommodations:

*Time out and space at times ... general assistance around the house.*

Students also hoped to receive encouragement and accommodations from employers. They believed employer support would be important in motivating them and facilitating conditions conducive to learning. Students anticipated needing to take time off work to complete assessments or attend exams, and hoped employers would be understanding; affording them flexibility in work hours or leave requests. Some students anticipated studying during work hours, and/or at their workplace; and hoped to access workplace resources, such as computers and printers, for their study. In addition, where their studies directly related to their employment, students expected employers might cover some course costs. In some cases, these accommodations had been agreed with employers prior to enrolment. Brooke, for instance, described the support she expected to receive from her employer:

*Work are paying for me to do it ... I will have some study time in my work hours ... the CEO is terribly excited so they are very supportive [sic].*

Alongside family and employer support, students hoped to receive subject matter, academic or technical assistance from others familiar with their field of study, university, computers, or OE. They expected to rely on more technically minded friends and family to assist them in navigating online systems and technical difficulties. Students also hoped others working in related fields, or who had completed similar courses, would assist with difficult course content. In addition, students expected the experiences of others who had recently studied, particularly those who had studied online, would be helpful in guiding their learning practices, understanding learning activities, and in simply being able to talk to someone who would understand their experiences. Tayla, for instance, described the academic and peer support she expected to receive from her academically experienced partner:

*My husband is PhD and is an excellent writes [sic] so I am lucky that I can discuss and talk through study with him in lieu of class mates.*

Students were aware support services may also be offered by the University. They were aware of services such as counselling, disability support, learning advice



and scholarships; and, in some cases, had accessed these prior to commencing. Students expected the University would also offer technical and academic support to help them participate in online activities. Some students, however, were unsure what services might be available to online students; or did not see such services as relevant. Largely, students expected that while support services may be available to resolve significant difficulties, they would likely manage without such assistance. Andrea, for instance, described awareness of potential support from the University, though she expected not to require their assistance:

*I know there are people I can talk to at [the case University] if I need to ... I feel I have enough people around me to help me get through.*

### ***Experiences of peripheral support***

As anticipated, students relied heavily on family and friends for support during their first year. Students found this support instrumental in enabling them to concentrate and manage their workload. The emotional support offered by partners and parents, furthermore, encouraged students to persist. In some cases, however, unexpected family circumstances influenced the extent of support available from significant others. Alana, for instance, described support from her partner enabling her to focus on studying for her second semester exams:

*My husband was fantastic as he basically did everything around the house during the last 4 weeks of the semester.*

Consistent with their expectations, students also found their employers to be supportive, offering flexibility through time off, and/or time at work to study. Some employers offered additional resources that enhanced access to students' studies, or covered costs associated with their course. Mitchell, for instance, described his employer's provision of a wireless internet device assisting him to complete his first semester:

*My employer came to the party with a Telstra aircard ... Work is supporting me, I need the qualification.*

Despite the widespread mention of expected employer support, however, few students explicitly discussed this support during their second and third interviews. Given the challenges described in balancing work and study responsibilities (see *Simultaneous priorities*, page 167), it is possible this reflects some students having experienced less employer support than anticipated.

As students expected, they found it helpful to discuss their studies with friends, family or colleagues who had studied at university, or were experienced in relevant fields. They appreciated opportunities to talk about their studies with someone who understood the challenges of OE, or studying at university. Others working in relevant industries, or who had completed similar courses, were able to provide helpful advice and assistance with complex content and assignments, and offered valued encouragement. In addition, students relied heavily on others' technical expertise, which was sometimes critical to completing and submitting assignments on time. Justin, for instance, described the technical support he received from his partner as integral to completing his first semester assignments:

*I also got my wife to type assignments as I would have had spelling errors galore and taken tooooo [sic] long to finish.*

While the majority of students did not seek assistance from University support services, and felt able to cope on their own, as they had expected; some had sought assistance following significant difficulties. These students accessed support for technical requirements and some had sought assistance from Learning Advisors, or made use of associated online resources, to build their academic skills. Some had also accessed private tutors to assist them with particular topics or assignments. Those who had accessed these services generally found them to be helpful. Students were particularly surprised at the accessibility and helpfulness of the University Library, as described by Samantha during her first semester:

*Library has been great with sending books for borrowing, they response [sic] very fast and I get textbooks within a week.*

Some students accessed non-academic support services, and found these to be helpful. Students with chronic illness or disability had spoken to Disability

Advisors and registered their needs, which facilitated associated adjustments. One student successfully applied for a scholarship, which helped cover the costs of his studies. While not explicitly discussed prior to commencing, some students also accessed University administrative services, or were approached by such services, for enrolment advice. Mitchell, for instance, described the assistance he received in enrolling for his second semester:

*Admin support seems good. Had some issues with deferring and re-enrolling via [online enrolment system]. In both instances an email fixed things pretty quick.*

In contrast, some students had poor experiences of University support services, and expressed confusion and frustration at receiving inconsistent or inadequate advice. Students also discussed hearing of peers' unsatisfactory experiences with some services, which deterred them from accessing services themselves. Some students, furthermore, remained unsure how the University could assist them as online students, or questioned how helpful these services might be. Justin, for instance, described his frustration in being unable to access the support he needed from the University in his first semester:

*They regularly could not help and seny [sic] me to other units to get info who would send me back to where I started ... no-one wanted to help.*

As they progressed, students increasingly recognised the potential value in accessing University support services, as well as support from significant others. In particular, they expected their success might improve through proactively accessing academic support services. Students intended to make better use of available University services in future, and expected to continue being supported by family and friends. Julie, for instance, described recognising she might benefit from accessing University services following her first semester:

*As for support I think I should of [sic] but I am an independent [sic] person and didn't. If for some reason I have any future issues I will definitely [sic].*

### ***Contributions to peripheral support***

Students described their *Ability* as having contributed to their experience of peripheral support. Specifically, strong *self-regulation* empowered students to proactively seek accommodations, encouragement and assistance from others. Eliza, for instance, described anticipating potential support needs and identifying applicable services to help her during her second semester:

*I set myself up a folder of useful info tips and where to find things online and its [sic] been a good resource for me.*

### ***Peripheral support summary***

The above descriptions suggest students' lived experiences of OE were influenced by their experience of peripheral support. Support from significant others and employers, enabled and encouraged online students to participate in their studies (Creed, French, & Hood, 2015; Palmer, Davis, & Maramba, 2011; Park & Choi, 2009; Stone et al., 2016). Content and learning advice from experienced others also helped online students engage with their studies (Lau, 2003; Tinto, 2002; Wilcox, Winn, & Fyvie-Gauld, 2005); while technical assistance was essential to students' participation/completion of online activities (Ali et al., 2004; Mupinga et al., 2006; Oomen-Early & Murphy, 2009). A change in family or employment circumstances, nonetheless, limited students' access to such support.

Online students accessed a variety of university support services, though preferred to seek help outside their institution (Jualal, 2015; Wintre et al., 2006). University services appear to be viewed, at least initially, as intended for those who might expect to struggle significantly with their studies, or as meant for on-campus students. As a result, these services were seen as irrelevant or inapplicable to more confident students, with their access a sign of weakness (Promnitz & Germain, 1996; Reynolds, 2011). Confusing or conflicting advice, furthermore, deterred students from accessing potentially helpful services (Hanover Research, 2012).

Figure 23 summarises the perceived connections between *peripheral support* and other *MAC-ICE* themes (left). Strong *self-regulation (Ability)* may assist students to proactively seek out appropriate support during their first year of study.

Despite peripheral support being important for students' lived experiences of OE; it was not explicitly described to have directly influenced the perceived quality of their OSE.

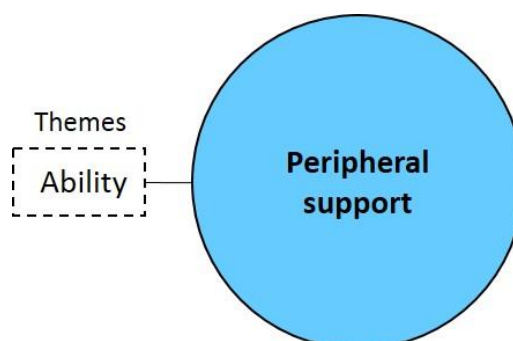


Figure 23. The perceived connection between *peripheral support* and other MAC-ICE themes (left).

### **Health and wellbeing**

Alongside *simultaneous priorities and support*, students' *health and wellbeing* constituted important *Circumstances* contributing to their lived experiences of OE. Students' expectations and experiences of *health and wellbeing*, contributing themes, and the perceived contribution of health and wellbeing to online students' outcomes, are again discussed below. The lived experience of *health and wellbeing*, and its perceived connection to other experiences and online student outcomes, are then summarised.

### ***Expectations of health and wellbeing***

Prior to commencing, students were concerned about staying well, managing their health and/or disability, and the potential impact of poor wellbeing, on their studies. Some experienced chronic health conditions, and anticipated these might disrupt participation in their online course. Others, such as Kristi, spoke of learning disabilities that might influence their capacity to understand or effectively engage with some learning activities:

*I have a learning disorder ... it may throw the odd challenge into studying.*

### ***Experiences of health and wellbeing***

As students expected, they found chronic illness or disability affected participation in their online course. Simply registering with disability support services, however, was insufficient to prevent some impact of disability on their studies. Unanticipated illness and personal challenges, such as the death of a loved one or a natural disaster, also affected students' physical and psychological wellbeing, and their capacity to focus effectively on their studies. Where students were unable to participate effectively in their studies due to disability, illness or wellbeing concerns, they fell behind, and were unable to contribute their best. Lucy, for instance, described the influence of mental illness on her first year:

*I had applied for a LAP [Learning Access Plan] which gave me extra time in exam because of mental illness ... However, the stress made my mental health issues (depression and anxiety) flare up again and I am still not well after really stressing over the exam.*

### ***Contributions to health and wellbeing***

Students described several factors having contributed to feelings of stress and wellbeing during their first year, reflecting a number of other *MAC-ICE* themes. Firstly, students' *Ability* influenced their wellbeing, with poor *organisation and time management* resulting in time pressures and stress. Layla, for instance, described feeling stressed by the speed of her first semester:

*I found the semester went so quickly that I was under a lot of pressure.*

Other *Circumstances*, including *simultaneous priorities*, also contributed to students' health and wellbeing. Having to manage several priorities, which competed for students' time and energy, put additional pressure on students. Prioritising their online course above other responsibilities also forced students to neglect other responsibilities, which affected their relationships and financial security, jeopardising their wellbeing. Annette, for instance, described the influence of simultaneous priorities on her wellbeing during her first semester:

*I was stressed whilst studying because I was trying to fit a lot into a week.*

In contrast, *Interaction* with *peers* enhanced students' wellbeing. Meaningful connection and support from other students reduced students' anxiety, and improved their wellbeing. Valentina, for instance, described how online peer support helped her cope during her first semester:

*It was to the most extent enjoyable and made more bearable by our facebook chat page and we will all get through with support from each other.*

In addition, *Curriculum challenge* contributed to students' wellbeing. Where students found their course especially difficult, they became stressed. Andrea, for instance, described the personal challenges she faced in rethinking her own biases during her first semester:

*It has challenged my own thinking ... I didnt [sic] realised [sic] how biased I was on a few issues. im [sic] not happy with all my own conflicts.*

Finally, the *Environment* was described to have contributed to students' wellbeing. The experience of *technical* difficulties compounded other issues and increased students' stress. Brenda, for instance, described her anxiety after losing a first semester assignment through technical error:

*I had an assignment disappear off turnitin [assignment submission and plagiarism detection program]... that was stressful cos I had to provide proof I submitted it and then resubmit it and then wait longer for my result.*

### ***Outcomes of health and wellbeing***

Following their first and second semesters, students described their health and wellbeing as having influenced the perceived quality of their OSE. Unexpected personal issues, overwhelming stress, illness and disability limited students' capacity

to dedicate their desired energy to study, and to achieve their intended outcomes. As a result, students felt less satisfied with their experience. Martin, for instance, described his disappointment at the impact of poor health during his second semester:

*A little broken hearted about being taken out by [illness] on the day of the exam. I had worked really hard.*

Students' difficulties managing their health and wellbeing also prompted them to consider reducing their study load. Poor health, personal issues and overwhelming stress interfered with students' participation in learning activities. Upon realising they might struggle to complete a unit, as a result of jeopardised participation, students chose to withdraw. Kristi, for instance, described deciding to withdraw from a unit in her second semester following poor health:

*Was half way through my second unit when I had to withdraw for health/family reasons.*

### ***Health and wellbeing summary***

The above descriptions suggest students' lived experiences of OE, and the perceived quality of their OSE, were influenced by their health and wellbeing. Students commenced their online course with pre-existing health concerns (Henry et al., 2014), and/or experienced significant illness, stress or personal issues during their studies. Poor health and wellbeing then limited online students' capacity to study. University support services were insufficient to mitigate the full impact of poor health, furthermore, even when anticipated.

Figure 24 summarises the perceived connections between *health and wellbeing* and other *MAC-ICE* themes (left), as well as the online student outcomes influenced by this health and wellbeing (right). Difficulties *organising* their time (*Ability*), *simultaneous priorities* (*Circumstances*), *overwhelming challenge* (*Curriculum*), and *technical difficulties* (*Environment*), may increase online students' stress, influencing their wellbeing. Meaningful *peer Interaction*, however,



may help to reduce students' stress and anxiety (Bergin & Pakenham, 2015; Nagel, 2009; Wilcox et al., 2005).

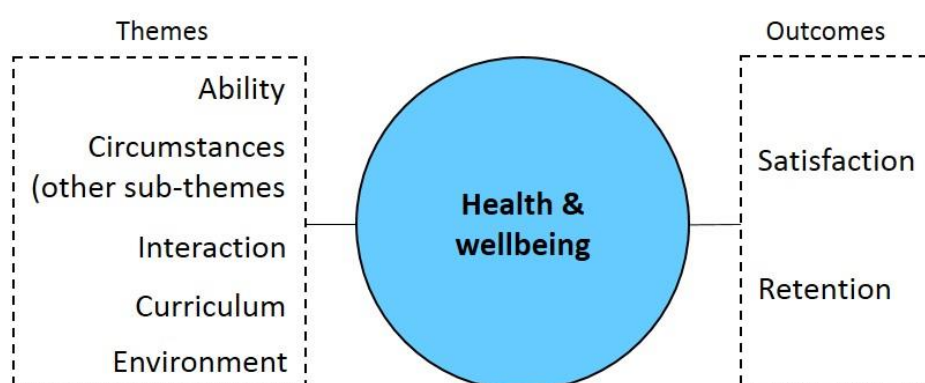


Figure 24. The perceived connections between *health and wellbeing*, other MAC-ICE themes (left), and online student outcomes (right).

The perceived quality of students' experience may suffer where students are unable to mitigate the impacts of poor health and wellbeing. Where students experience substantial stress, illness, disability, or personal tragedy, they may be prevented from investing fully in their course, resulting in disappointment and dissatisfaction. The impact of poor health/wellbeing and stress may also drive students to withdraw from their course/unit(s) (Hyllegard et al., 2008). Regardless of students' awareness of such challenges, furthermore, they may be unable to prevent poor health and personal issues from influencing their OSE.

### Study environment

Students' physical *study environment* formed an important component of their *Circumstances*, and lived experiences of OE. Students' expectations and experiences of their *study environment*, contributing themes, and the perceived contribution of their study environment to online students' outcomes are discussed below. A summary of the lived experience of *study environment*, and its perceived connection to other experiences and online student outcomes, is then presented.

### ***Expectations of study environment***

Students expected to engage with their studies primarily at home, with some study done at work, in a nearby library, or at a (local) university campus. At home, students expected to be flexible in where they studied, reading on the couch or in bed, or working from a table in their living area or kitchen. Some had dedicated home offices, which they hoped would provide a quiet study space, away from potential distractions. Students expected they would need to access a library to research for assignments, or if they found it difficult to concentrate at home. In addition, students anticipated studying while on the move; listening to lecture podcasts on their phone or in their car, and working off a laptop at any desired location, as described by Samantha:

*Keeping everything on the laptop ... Don't think I will go anywhere where won't be able to take studies with me.*

### ***Experiences of study environment***

As students expected, they mostly studied at home; though some were able to study at their workplace. Students occasionally accessed a local library or visited a university campus to access reference material and quieter study spaces. They appreciated the capacity to be flexible in where they studied, taking advantage of opportunities to read or listen to lecture podcasts wherever they were most comfortable, including while in transit. Students sometimes struggled, however, to find suitable spaces to focus on their studies. In particular, where students lacked a dedicated home office, they found it difficult to avoid distractions. With experience, students increasingly recognised the value of dedicated study spaces and made efforts to arrange these in preparation for future semesters. Andrea, for instance, described her intentions to organise a more suitable study environment following her first semester:

*Am trying to convince the husband to build an office so I can have a space at home to study that I can close the door and focus.*

### ***Contributions to study environment***

Students described several factors having contributed to their study environment, corresponding to a number of other *MAC-ICE* themes. A *flexible Curriculum* influenced students' capacity to choose where they engaged with their studies. Julie, for instance, described her appreciation of the flexibility to study at home during her first year:

*I like working from hhome [sic] and in my own time. It's a great way to learn.*

In addition, the *Environment* contributed to students' physical study environment. Innovative and reliable *technology* enabled students to participate in learning activities wherever they preferred; while *online delivery* required students to take full responsibility for ensuring their chosen study location was conducive to participation. Laverne, for instance, described how mobile technology enabled her to study wherever she chose in her first semester:

*I can take my laptop and as long as I can access the internet, I have access to all I need to complete my work....technology is brilliant.*

### ***Study environment summary***

The above descriptions suggest students' lived experiences of OE were influenced by their study environment. Online students planned to study wherever was most convenient and comfortable (McLaughlin & Mills, 2009; Serhan, 2010). They anticipated and accessed quiet environments when necessary, such as a library or local university campus, though having a dedicated space at home was especially helpful (Didarloo & Khalkhali, 2014).

Figure 25 summarises the perceived connections between students' *study environment* and other *MAC-ICE* themes (left). Mobile *technology* (*Environment*) and *Curriculum flexibility* may be highly valued by online students; enabling them to study anywhere they choose, including while in transit (Cluett & Skene, 2011; McLaughlin & Mills, 2009). While students' physical study environment was an important aspect of their lived experiences, it was not explicitly described to have

directly influenced the quality of their OSE. It is feasible students' study environment may contribute instead to their *concentration*, indirectly contributing to online student outcomes.

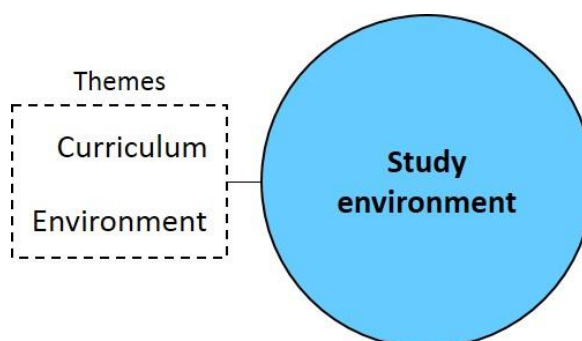


Figure 25. The perceived connection between *study environment* and other MAC-ICE themes (left).

### Circumstances and the Online Student Experience

It is clear the *Circumstances* in which students participate in their studies play an important role in their lived experiences of OE, and the perceived quality of their OSE. Students can commence their online course alongside multiple *simultaneous priorities* (Carr, 2000; Packham et al., 2004; Promnitz & Germain, 1996). Despite anticipating challenges in balancing these responsibilities, students can overestimate their capacity to dedicate sufficient time and energy to their studies, and may need to make sacrifices to re-balance these priorities (Packham et al., 2004; Promnitz & Germain, 1996; Reynolds, 2011). Students may also fail to anticipate synchronous learning requirements, for which some may be unable to ensure availability due to other commitments. The salient reporting of challenges associated with *simultaneous priorities*, furthermore, suggests students are not fully aware, or do not fully appreciate, the extent to which OE is, in itself, a significant commitment. Perceptions that OE is easier than on-campus learning (DiRienzo & Lilly, 2014; Hyllegard et al., 2008; Moody, 2004), and the extent to which it is promoted as suitable for people with multiple simultaneous commitments, could contribute to these expectations.

Though online students expect to cope primarily on their own, they appreciate *support* from family, friends, employers and their university. Emotional

support and encouragement can help motivate online students, while accommodations, such as help with household chores, childcare, time off from work and financial support enables students to prioritise their studies (Creed et al., 2015; Palmer et al., 2011). Connecting with others who have prior experience of university or expertise in a related field can also help online students engage with their studies (Lau, 2003; Tinto, 2002; Wilcox et al., 2005). In addition, though some students anticipate potential *health* challenges, and connect with relevant services; illness, unexpected personal issues or disability can limit online students' capacity to participate in their studies (Promnitz & Germain, 1996; Reynolds, 2011). Online students may be unsure what university services are able to assist them, furthermore, or may not feel these services are intended for them (Hanover Research, 2012).

Understanding the physical *study environment* in which participants engaged with their studies offers further insight into the circumstances in which online students participate in learning activities. Online students do not simply sit at a computer, in a simulated classroom/lecture situation. Rather, the locations where online students' engage with learning activities are varied and personalised to individual preferences, availability and surroundings (McLaughlin & Mills, 2009; Serhan, 2010). Though some students may access dedicated study spaces at home, others can struggle to find suitable spaces free of distractions. Students are excited by the opportunities afforded by OE, nonetheless, to study wherever they feel most comfortable; and may particularly appreciate the opportunity to participate through mobile technology (McLaughlin & Mills, 2009).

Figure 26 summarises the perceived connections between *Circumstances*, other *MAC-ICE* themes (left), and online student outcomes (right). Students' *Ability* may influence to their access to *peripheral support* and management of *health and wellbeing*. Institutional *Curriculum* and *Environment* may contribute to students' experience of *simultaneous priorities*, *health and wellbeing*, and *study environment*, while *Interaction* may contribute to students' *health and wellbeing*. The *Circumstances* sub-themes may also be somewhat interconnected, with *peripheral support* contributing to *simultaneous priorities*.

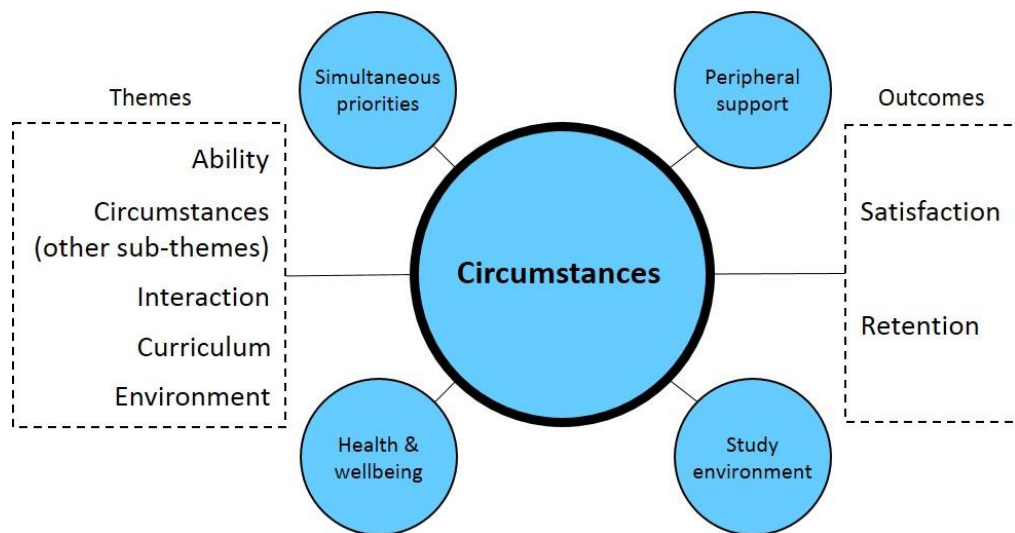


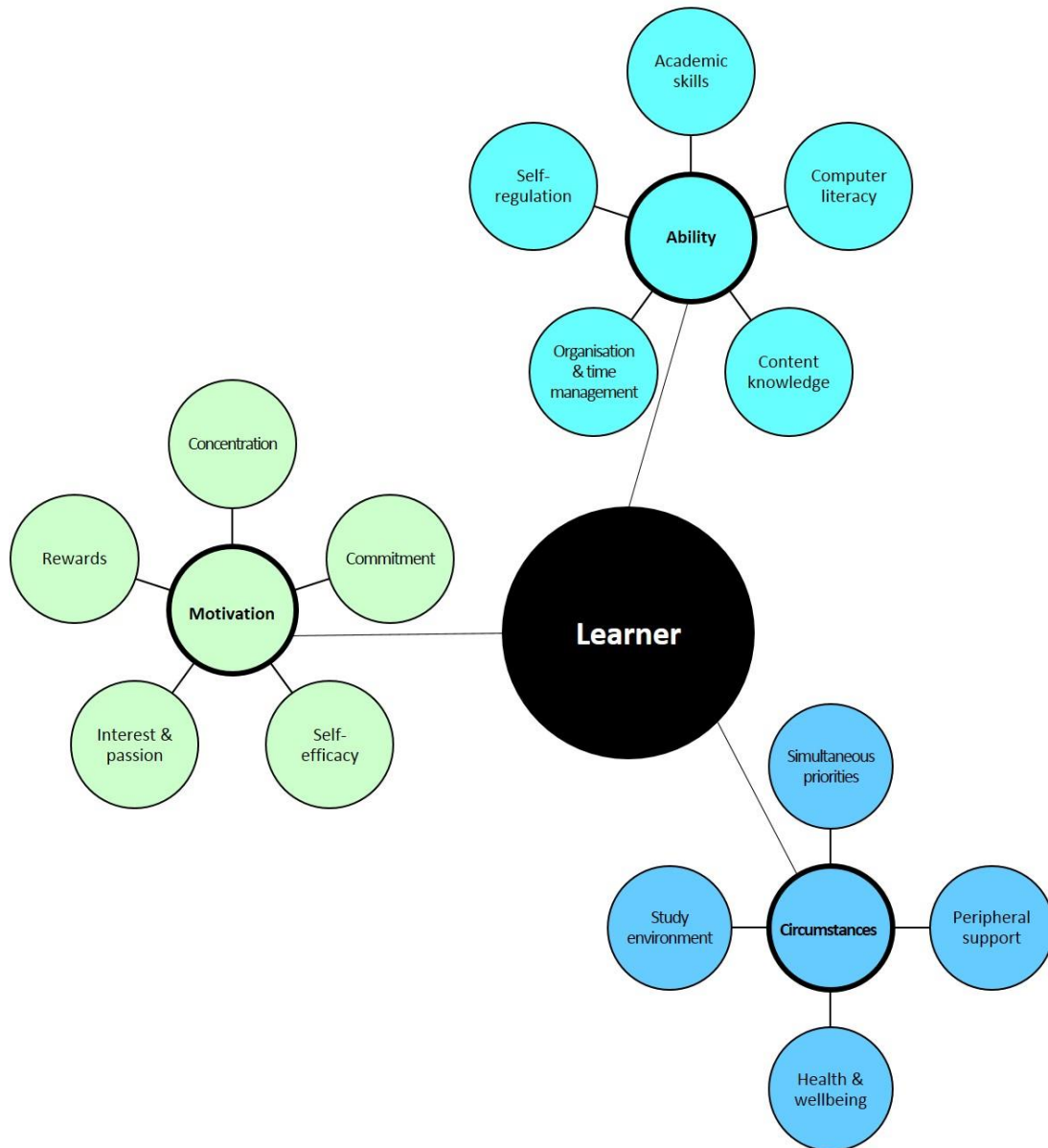
Figure 26. The perceived connections between *Circumstances*; other MAC-ICE themes (left); and online student outcomes (right).

Online students' *Circumstances* may subsequently inform their satisfaction and retention. Where students experience substantial stress, illness, disability, or personal issues (poor *health and wellbeing*), they may be prevented from investing fully in their studies, resulting in disappointment and dissatisfaction. Where students are unable to mitigate the impact of poor *health and wellbeing*, or to balance their *simultaneous priorities* alongside study effectively, they may elect to withdraw from their course/unit(s) (Hyllegard et al., 2008; Moore & Greenland, 2017; Packham et al., 2004).

### Summary of learner themes

Online students may hold expectations and have experiences corresponding to their personal *Motivation* to learn; self-assessed *Ability* to participate and succeed in their studies; and the *Circumstances* in which they engage with OE. Online students' *Motivation*, or internal energy and drive to engage with their studies, incorporates their lived experiences with regard to *commitment, concentration, self-efficacy, interest and passion, and rewards*. Students' *Ability*, or self-assessed competence in particular skills/activities associated with online and/or university education, incorporates their beliefs and reflections on their *academic skills, computer literacy, prior content knowledge, organisation and time management, and*

*self-regulation. Circumstances*, or broader life surrounding students as they engage with OE, incorporates *simultaneous priorities, peripheral support, health and wellbeing*, and students' physical *study environment*. These *Motivation, Ability, Circumstances*, or 'MAC', themes together form a thematic structure for participants' learner-related lived experiences of OE, illustrated in Figure 27.



*Figure 27.* The thematic structure for students' learner-related lived experiences of OE, incorporating *Motivation, Ability* and *Circumstances (MAC)* themes and sub-themes.

These learner themes may play an important role in the OSE. Table 4 summarises the *MAC-ICE* themes (left) perceived to contribute to learner *Motivation, Ability* and *Circumstances*; as well as the online student outcomes influenced by these learner themes (right); forming a matrix of thematic connections. Reading from left to right, perceived connections are indicated by a cross. This learner thematic matrix shows online students' *Motivation* may be influenced by other aspects of their *Motivation*; as well as students' *Ability* and *Circumstances*; and institutional *Interaction, Curriculum* and *Environment*. Students' *Ability* may be influenced by their *Motivation*, other aspects of their *Ability, Circumstances, Interaction, Curriculum* and *Environment*. Online students' *Circumstances* may be influenced by students' *Ability*, other aspects of their *Circumstances, Interaction, Curriculum* and *Environment*.



Table 4: Perceived Connections between Learner (MAC) Themes, other MAC-ICE Themes, and Online Student Outcomes

	Learner themes			Online student outcomes			
	Motivation	Ability	Circumstances	Learning	Academic performance	Satisfaction	Retention
Motivation	X	X		X	X	X	X
Ability	X	X	X	X	X		X
Circumstances	X	X	X			X	X
Interaction	X	X	X				
Curriculum	X	X	X				
Environment	X	X	X				

Learner themes may subsequently influence online students' learning, academic performance, satisfaction and retention. Specifically, online students' *Motivation* may contribute to their learning, academic performance, satisfaction and retention. *Concentration*, in particular, may contribute to the depth of online students' learning (Seo, 2009), and subsequent academic performance (Griffin et al., 2013; Waschull, 2005). Students' *concentration, commitment, self-efficacy, interest and passion*, and *rewards*, may all contribute to online student satisfaction (Chen et al., 2017; Chiu et al., 2007; Dziuban et al., 2015; Shen et al., 2013); and students' *commitment* to their online course may influence retention (Chang et al., 2015; Kember, 1989; Lau, 2003).

Students' *Ability* may also influence the perceived quality of their OSE, with regard to students' learning, academic performance and retention. Prior *content knowledge* may contribute to online students' learning (Terry et al., 2016); and students' *academic skills* and *time management* may inform their academic performance (Cavanaugh & Jacquemin, 2015; Mason et al., 2015; Waschull, 2005). Students' *organisation and time management* may contribute to retention (Hyllegard et al., 2008; Packham et al., 2004).

Finally, students' *Circumstances* may inform the perceived quality of their OSE, with regard to satisfaction and retention. Specifically, online students' *health and wellbeing* may contribute to their satisfaction. *Health and wellbeing*, along with *simultaneous priorities*, may subsequently contribute to online student retention (Hyllegard et al., 2008; Moore & Greenland, 2017; Packham et al., 2004).

The next chapter presents a similar discussion of students' lived experiences of OE, focused on their *institution*. As for learner themes in the present chapter, Chapter Five introduces each identified institutional theme and sub-theme, and discusses corresponding expectations, experiences and outcomes, before summarising the overall findings. Chapter Six then reflects on these findings, interpreting the lived experience of OE in the context of prior research, with implications for theory and practice.

## CHAPTER 5: The Lived Experience of Online Education – Part II (The Institution)

Supplementing the learner themes discussed in Chapter Four, this chapter focuses on students' *institution*-related expectations, experiences and outcomes of OE. The chapter describes how participants constructed experiences of OE associated with their institution, and attributed meaning to these experiences, further addressing the three research questions. The chapter begins by discussing each identified institutional theme (*Interaction*, *Curriculum*, and *Environment*) and respective sub-themes, with detailed discussion of corresponding expectations, experiences and outcomes. Specific expectations and experiences for each sub-theme are discussed and compared, with their perceived role in online student outcomes explored. Quotes are again provided to illustrate the authentic voice of online students, and have not been corrected. The learner and institution-related expectations, experiences and outcomes are then brought together later in the Chapter, building a full thematic structure of students' lived experiences of OE, and a thorough account of perceived contributions to a quality OSE.

### Interaction

Alongside their personal characteristics and situations, students described experiences of their institution. Students identified interaction associated with their course as playing a particularly important role in their lived experiences of OE, and the quality of their OSE. The *Interaction* theme referred to any formal or informal opportunities to connect and engage with course content, and with others in students' courses, including instructors and peers; or the absence of such opportunities. Interaction with others not directly involved in their course was categorised under *Circumstances* (see *Peripheral support*, page 173), as relating to students' social circumstances, rather than their institution. It is also noted that university support services are related to the institution, though classified under *Circumstances*, reflecting strong synergies with external sources of support.

The *Interaction* theme, illustrated in Figure 28, combines expectations and experiences (sub-themes) of students' interaction with *instructors*, *content* and *peers*. As in the previous chapter, each *Interaction* sub-theme is introduced below and discussed in the context of corresponding expectations, experiences and outcomes. The connections between each sub-theme and other *MAC-ICE* themes, and the perceived contribution of each *Interaction* sub-theme to online students' outcomes, are then summarised.

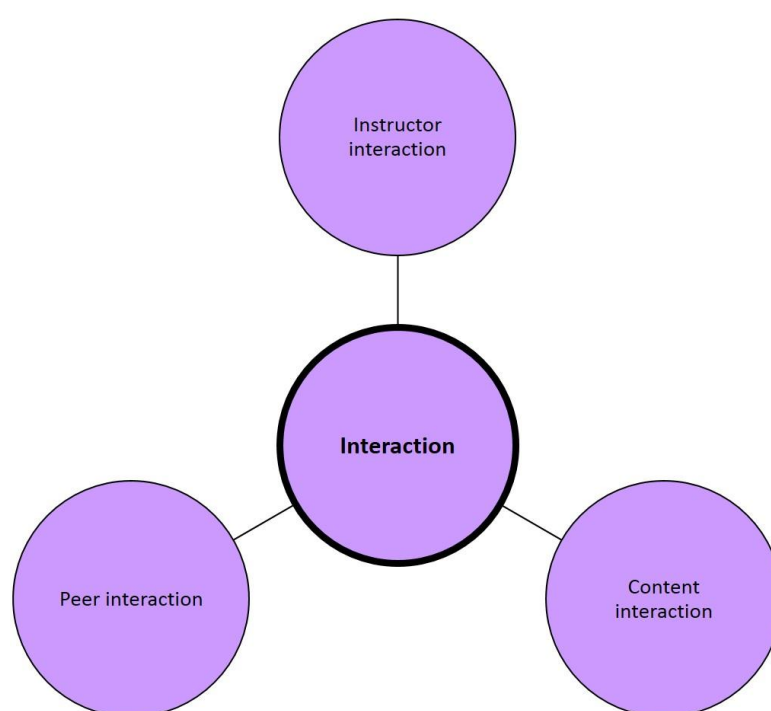


Figure 28. The *Interaction* theme, incorporating sub-themes of *instructor*, *content* and *peer interaction*.

### **Instructor interaction**

Students' *Interaction* with *instructors* (tutors, lecturers and unit coordinators) formed an important aspect of their lived experiences of OE. As for previous sub-themes, students' expectations and experiences of *instructor interaction* are discussed in detail below, with contributing themes examined, before discussing the perceived influence of instructor interaction on online students' outcomes. The lived

experience of *instructor interaction*, and its perceived connection to other experiences and online student outcomes, are then summarised.

### ***Expectations of instructor interaction***

Students expected instructors would provide guidance, feedback and support; offering direction and helping students identify what they should be doing, when and why; as well as providing clear information about their course and assessment. Students hoped to receive timely feedback on their progress, with guidance on how they could improve. Students were also hopeful instructors would facilitate interactive opportunities to discuss content and assessments. They expected instructors to be supportive and approachable, responding effectively and efficiently to requests for further assistance. Students felt some value might be lost in being unable to meet face-to-face, yet anticipated communicating with their instructors via email, phone, synchronous chat, and/or discussion forums. Some students, nonetheless, planned to visit campus to meet instructors in person. Holly, for instance, described her expectations for instructor accessibility and support:

*Fast replies to questions ... email support, like questions\answer and advice.*

Some students, however, did not expect substantial interaction with instructors, anticipating they would largely manage their own learning. The expectation of limited instructor interaction was particularly salient for students who held greater professional or university experience. These students expected the majority of contact from instructors would consist of generic announcements via email or the LMS. Announcements would then guide students' learning activities and preparation for assessment, while detailed feedback on assignments would show students where they had done well or fallen short on particular criteria, facilitating opportunities for further improvement. Beyond this, students expected instructor interaction would be limited to student-initiated contact. They anticipated interacting with instructors only if they needed particular questions answered, or required further clarification on specific issues. Students expected, nonetheless, that instructors would be approachable and accessible if/when they sought such

assistance. John, for instance, described expecting little interaction with instructors, except in response to significant difficulties:

*To be honest I don't expect much interaction with them unless there is [sic] problems or major issues.*

### ***Experiences of instructor interaction***

Following commencement, students described diverse experiences of instructor interaction. The extent and quality of instruction varied between units and between instructors. Some instructors were felt to have provided highly effective guidance, feedback and support, while others offered very limited contact, and insufficient advice and feedback. This inconsistency was frustrating, adding substantial time and effort to students' study, and making it difficult to set accurate expectations for future units. Stephen, for instance, described the contrast in instructor interaction across different units in his first semester:

*2 were very helpful, another would occasionally do a lecture and one I didn't hear from.*

Students appreciated instructors who were approachable, understanding, encouraging and responsive; and who provided clear instructions and feedback. In particular, they found instructors' active participation on the discussion boards, as well as timely responses, to be highly valuable. Students acknowledged, nonetheless, they needed to be assertive in requesting assistance or clarification. Chloe, for instance, described valuable interaction with one of her instructors during her first semester:

*She was excellent, was on the [discussion board] most days, great comments and feedback all the time, lots of hints and help when needs [sic], answered all emails and kept everyone in line really well. Gave great feedback and was very ahppy [sic].*

Conversely, some instructors were felt to have offered limited, inconsistent or insufficient communication and guidance. Students were disappointed with such instruction; finding some instructors un-contactable, unresponsive or unhelpful.

Students described receiving less guidance, feedback and support than expected, especially during their first few weeks. Some spoke of receiving almost no communication from instructors, despite approaching them for assistance. Upon contacting the case University, for instance, one student learned their instructor was unaware they were responsible for the unit. After waiting three weeks for contact, another student discovered her unit was not intended to run at all. In the absence of sufficient instructor interaction, students struggled to follow learning activities, interpret learning materials, and keep up-to-date. They felt ignored, left to “‘teach’ myself so to speak” (Justin, first semester). Where feedback was vague or delayed, furthermore, students found it difficult to prepare effectively for subsequent assessment. This frustration with low instructor interaction was described by Brooke, in her first semester:

*No communication with my lecturer ... No feedback, no contact ... I had no results for my assignments until a few days before my exam ... When I went to start this semester there was nothing uploaded ... It has led to a lot of frustration ... I had no idea whether I was on track or not.*

With experience, students expected they would need to be more proactive in seeking assistance, and not wait for instructors to contact them. They recognised a need to be assertive in articulating their needs, and persistent in demanding support from instructors. While students continued to desire meaningful guidance, feedback and support, some had lowered their expectations for instruction, following disappointing experiences. Without sufficient instructor interaction, students expected they would continue to struggle, and/or the value of their experience would diminish. Delores, for instance, described having lowered her expectations of instructor interaction following her second semester:

*I’ve come to expect lower standards for externals. I think its [sic] just the nature of studying online.*

### ***Contributions to instructor interaction***

Students described their *Ability*, specifically their *self-regulation*, as having contributed to their interaction with instructors. Effective management of students’

own actions encouraged them to proactively seek instructors' guidance. Assertive and proactive contact with instructors allowed students to clarify instructions in a timely manner. Julie, for instance, described the need to anticipate delays when seeking assistance from instructors during her first semester:

*There is a delay period so you have to make sure you get in early to wait [sic] for the reply.*

### ***Outcomes of instructor interaction***

Following their first and second semesters, students described instructor interaction as having influenced the perceived quality of their OSE. Where students received clear guidance and timely feedback from their instructors, they felt well equipped to meet the requirements of their assessment and perform well. Clear instructions helped students understand how to approach and complete associated tasks. Meaningful and timely feedback then clarified shortfalls and facilitated improvements in subsequent assessment. In contrast, where students experienced limited contact from instructors, they felt lost, struggling to identify what was required for their assessment. Inconsistent or vague instruction and feedback was confusing, and hindered students' capacity to address assessment criteria, preventing them from performing as well as they would have liked. Delores, for instance, described feeling her first year performance was limited by the extent of instructor interaction:

*I feel that I could have done a lot [sic] better if there was more support from the staff.*

Instructor interaction was also viewed as integral to students' satisfaction. Approachable, encouraging and responsive instructors facilitated an enjoyable and satisfying experience. A lack of proactive assistance and slow responses, coupled with inconsistent or insufficient advice, on the other hand, frustrated students and led to a disappointing experience. In these situations, students felt lost, abandoned, unsupported, and disadvantaged as online students. Unsure of their progress, students questioned the value of their course. Lisa, for instance, described her disappointment with the quality of instructor interaction during her first year:



*I think it could be a lot better ... could have regular online tutorials, and planned contact with someone who is familiar with the course, and some direction on [the discussion boards] - not just random contributions.*

### ***Instructor interaction summary***

The salient inconsistencies and limited instructor interaction described by participants suggest some fundamental concerns in relation to online instruction. Though the case University has established quality standards and assurance guidelines for instruction, it appears these were not consistently applied across all units, or by all instructors. These guidelines, for instance, specify students should be clearly advised of expected instructor availability and response times, including the level of instructor participation on discussion boards; and students should be encouraged to interact with the teaching staff (Case University, 2014a). The reported concerns with instruction, however, suggest some students were either not aware how much interaction to expect, were not encouraged to interact, or were not able to interact sufficiently with their instructors (Porrás-Hernández, 2000; Scutter et al., 2011). It is clear students were less than satisfied, furthermore, with the quality of guidance, feedback and support offered by some instructors.

The absence of meaningful interaction with instructors was disappointing and challenging for online students (Antonis et al., 2011; Palmer & Holt, 2009; Stone, 2017). As a result, limited interaction was perceived as evidence of a poor quality unit, institution, or a reflection on OE itself. Despite inconsistent adherence, students' comments support the value of the case University's standards, recognising approachable and supportive instructors, who actively participate, and provide clear direction and timely, meaningful feedback, are highly valued (Boud, 2010; O'Shea et al., 2015; Stone et al., 2016). It was possible, nonetheless, for online students to compensate for limited instructor interaction through assertiveness and persistence in seeking guidance and clarification.

Figure 29 summarises the perceived connections between *instructor interaction* and other *MAC-ICE* themes (left); as well as the online student outcomes influenced by this interaction (right). Participants' experiences suggest online students' *Ability*, namely *self-regulation*, may contribute to their experience of

instructor interaction. *Instructor interaction*, subsequently, may influence online students' academic performance and satisfaction. Where instructors offer meaningful and regular guidance, feedback and support, online students may be better able to address assessment criteria, and perform well as a result (Boud, 2010; Elliott & Adams, 2011; Stone, 2017). Encouraging, active and responsive instructors may also facilitate a satisfying experience (Dziuban et al., 2015; Ilgaz & Gulbahar, 2015; Paechter et al., 2010). Participants frequently expected more guidance, feedback and support from their instructors than they subsequently experienced, however, suggesting online students may feel frustrated, disappointed, and neglected by their university, where these expectations are not met. The degree to which online students' expectations for instructor interaction are met, therefore, may also influence the extent to which students are satisfied with their experience (Chiu et al., 2007; Lee, 2010; Oliver, 1980).

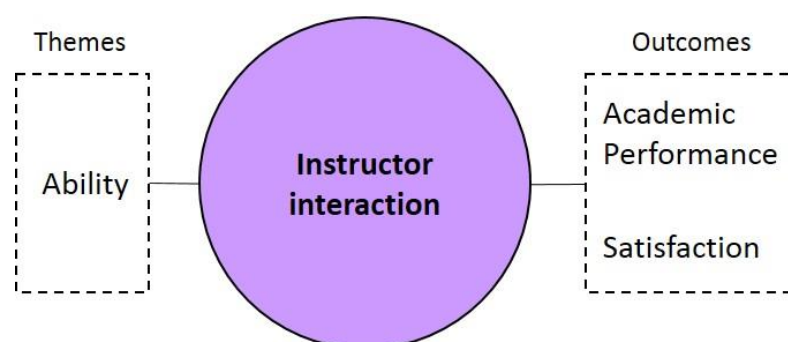


Figure 29. The perceived connections between *instructor interaction*, other MAC-ICE themes (left), and online student outcomes (right).

### Content interaction

Students' *Interaction* with course *content* formed an important aspect of their lived experiences of OE. Students' expectations and experiences of *content interaction*, contributing themes, and the perceived contribution of content interaction to online students' outcomes, are discussed below. A summary of the lived experience of *content interaction*, and its perceived connection to other experiences and online student outcomes, is then presented.

### ***Expectations of content interaction***

Students expected to interact with engaging content and learning materials during their course. They anticipated viewing electronic slide presentations, and hoped to access audio or video recordings, and to participate in interactive online classes. Students expected to engage with their studies predominantly through written content, nonetheless, such as assigned readings and textbooks. They anticipated their course would involve a substantial amount of reading, potentially more than on-campus programs, with much of the course content delivered in this way. Eva, for instance, described her anticipation of a heavy reading load in OE:

*I think it will mean more reading and more looking a [sic] other resources than ... attending lectures [on campus].*

### ***Experiences of content interaction***

As students expected, they received much of their course content through electronic slideshows, lecture notes, textbook chapters and assigned readings; yet found the quality and interactivity of course learning materials to vary. While not explicitly discussed prior to commencing, students also completed online exercises, which offered opportunities to practice and clarify concepts. In addition, quizzes and example questions enabled students to test their understanding of key concepts, and/or to identify areas for improvement.

Where provided and meaningful, students particularly appreciated audio-visual learning materials. Recordings of on-campus lectures, audio-narrated slideshows, videos and synchronous chat sessions made content more engaging and easier to digest. Interactive opportunities to explore and discuss content with the instructor present were particularly valued. Delores, for instance, described the value of synchronous chat sessions during her first year:

*With a couple of units they did a similar set up to this page [synchronous chat] and the lecturer talked, that helped HEAPS.*

While some units provided recorded lectures, and/or synchronous chat sessions, others relied solely on texts and unengaging slideshows, often lacking

sufficient explanation, which may have been offered by audio commentary, or by attending on-campus lectures. In some cases, students were also forced to rely on out-of-date learning materials. In the absence of engaging or meaningful learning materials, students' enthusiasm waned and they felt lost, abandoned and left to work things out on their own, as described by Brooke in her first semester:

*The power-points are almost useless as they need the commentary to make sense.*

Students were required to consume substantial written material, as they had expected, in the form of lecture notes, textbook chapters and readings, as well as ongoing discussion threads. The volume of reading required, and the associated time commitment, however, were considerably underestimated, with students struggling to keep up with the heavy reading load. The amount of reading amplified the time needed for their studies, and some fell behind as a result. Students subsequently anticipated they would need to be more vigilant with reading in future. Ruby, for instance, described having recognised the importance of keeping up to date with readings following her second semester:

*Keeping up with the readings for the management unit was hard, there was just so much ... I also know [now] that keeping up with the readings and taking good notes is vital!!*

### ***Outcomes of content interaction***

While no other *MAC-ICE* themes were explicitly reported to have contributed to content interaction, students' engagement with learning materials and activities influenced the perceived quality of their OSE. Low quality, vague or incomplete materials prevented students from determining what and how they needed to learn, while meaningful opportunities to interact with online course content were perceived to facilitate deeper learning. Engaging audio-visual lectures and interactive tutorials, in particular, encouraged and enabled students to learn deeply. Brenda, for instance, described dynamic content facilitating deeper learning during her first semester:

*Very engaging and easy to listen to and I have retained allot [sic] of that unit.*

Students also valued opportunities to develop and engrain their learning through assessment and exercises. Applying theoretical concepts to real-world scenarios, and/or researching topics for assignments, helped students gain a deep understanding, and better retain associated knowledge. Non-assessed quizzes and exercises further enabled students to clarify, practice and check their understanding. Where assessment focused on recalling facts, however, students adopted surface learning strategies, and felt unlikely to retain this knowledge. Justin, for instance, described the short-term, superficial focus of assessment during his first semester having resulted in shallow learning:

*You only have to remember the stuff for 8-10 weeks then you can forget it all as you don't get tested again.*

Engaging and dynamic content was also described to have facilitated a satisfying OSE. Regular exercises and interactive tutorials captivated students. Effectively engaged, students enjoyed their learning, and felt satisfied with their experience. Static/text-based materials, on the other hand, prevented deep engagement with their course, reducing enjoyment and boring students. Holly, for instance, described her disappointment at the reliance on text-based materials during her first semester:

*I wish all my units were more interactive rather than just doing readings etc ... just because we are doing it online it doesn't mean we have to see lots of texts.*

### ***Content interaction summary***

The above descriptions suggest students' lived experiences of OE, and the perceived quality of their OSE, were influenced by content interaction. Dynamic, interactive and informative learning materials/activities were especially valuable in engaging online students, and helping them develop a thorough understanding of associated topics. The use of audio-visual and interactive content, in particular,

enhanced engagement and understanding (Huang et al., 2011; Lambrinidis, 2014; Oh & Kim, 2016; Signor & Moore, 2014; Stone, 2017; Tomas et al., 2015). Quizzes and non-assessed learning activities also enabled students to practice and test their understanding (Huang et al., 2011; Signor & Moore, 2014); while regular/structured interaction helped students develop their understanding (Antonis et al., 2011; Lambrinidis, 2014; Mills, 2015; Tomas et al., 2015). Conversely, static, text-based materials disengaged or confused students, adding substantially to their workload.

Figure 30 summarises the perceived connections between *content interaction* and online student outcomes (right). While no other themes were perceived to have contributed to content interaction, *content interaction* may contribute to online students' learning and satisfaction. Text-based materials and abstract/superficial assessment may be less engaging and make content hard for online students to digest, promoting surface learning strategies (Huang et al., 2011; Jones, Warren, & Robertson, 2009; Signor & Moore, 2014). In contrast, dynamic and interactive learning materials, and applied assessment, may engage online students and encourage deeper learning (Kift, 2004; Lo, Johnson, & Tenorio, 2011; Oh & Kim, 2016; Tomas et al., 2015). Online student satisfaction may also be increased where students engage with dynamic and interactive learning materials (Calli et al., 2013; Ilgaz & Gulbahar, 2015; Kramer & Bohrs, 2016; Kuo et al., 2013); while static, text-based materials may disengage and bore students. OE may require substantially more reading than students expect, relying heavily on text-based learning materials, furthermore; suggesting a need to incorporate interactive content in online courses to satisfy student expectations.

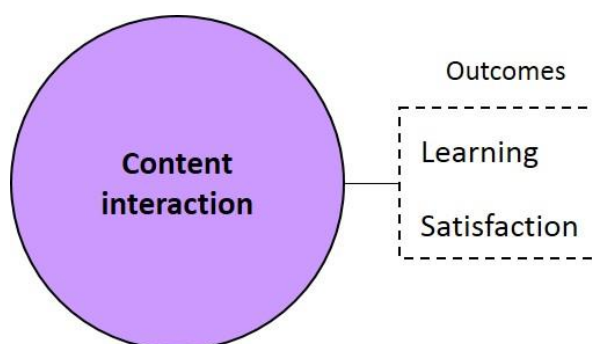


Figure 30. The perceived connection between *content interaction* and online student outcomes (right).

## **Peer interaction**

Students' *Interaction* with *peers* in their online course formed an important aspect of their lived experiences of OE. Students' expectations and experiences of *peer interaction*, contributing themes, and the perceived contribution of peer interaction to online students' outcomes, are discussed below. The lived experience of *peer interaction*, and its perceived connection to other experiences and online student outcomes, are then summarised.

### ***Expectations of peer interaction***

Students expected to engage in regular online discussions with other students, in some cases as a course requirement. Students also desired to connect with other students informally, through online communication channels, as well as face-to-face study groups. Students expected the usefulness of peer interaction, however, would depend on the extent to which other students engaged in the conversation. They hoped to be supported socially and academically by their peers, with meaningful discussions helping to develop and clarify their understanding. Students anticipated connecting with other students would help them feel engaged and part of the University community. Delores, for instance, described her anticipation of peer connection and support:

*Will be able to interact with students for moral support ... share experiences and to bounce ideas off.*

Though students felt peer interaction might be helpful, some did not anticipate such opportunities, and felt this would be unfortunate. Students were particularly concerned they may be disadvantaged as online students, in being prevented from meeting other students face-to-face; and consequently, from learning through others' questions, understanding and support. Without face-to-face interaction, students expected to feel isolated and lonely, affecting their engagement, motivation and enjoyment. Some students reported a preference for on-campus programs because of this interaction, though their circumstances prevented them from studying on campus. They accepted online conversations might mitigate the lack of face-to-face interaction to some extent, however, this was not their preferred

means of communication, and was viewed as less effective. It was also expected online contact might be limited by others' locations (time zones) and availability. Stephanie, for instance, described expecting peer interaction would be limited in OE:

*Studying online isn't my ideal thing. I would like to have studied oncampus [sic] and where I could network with others.*

A small number of students felt peer interaction might distract from their studies, and did not anticipate engaging extensively with other students in their course. They viewed this as extracurricular, and of more relevance to students looking to make friends. Instead, these students felt OE offered the opportunity to learn independently, enabling them to focus purely on course content and assessment. Gabriel, for instance, described his disinterest in peer interaction:

*Not really looking for any social interaction more just want to focus on the course.*

### ***Experiences of peer interaction***

As many anticipated, students found some peer interaction to be required during their course. Compulsory discussions, however, were not always felt to be worthwhile. Obligatory participation lead to superficial and repetitive posts, which were less helpful and wasted students' time. Monitoring such discussion threads was especially time consuming. Optional discussions were also less valuable where the instructor, and/or other students, did not actively participate. Some students chose not to participate in optional discussions, as they felt these were unnecessary distractions, electing to focus on essential requirements instead. Kevin, for instance, described the superficiality of assessed online discussions during his first semester:

*We got marks for participating in discussions on BB [Blackboard] but ppl [people] were just doing posts for the marks there was no real socialisation or interaction as such ... much rather focus on what I need to do rather than waste time on that to be honest.*

Though not explicitly anticipated, students were also required to complete group assignments. While some found group work helped them get to know other



students, and to consider different perspectives; many found it especially difficult to rely on the efforts of peers, and to manage the logistics of working with other online students. Students voiced substantial frustration where group members had not contributed sufficiently to their assessment, and felt they might have performed better independently. Chloe, for instance, described the challenge of relying on a less committed peer for a first semester assignment:

*Had a joint assignement [sic] (which went ok but partner was a bit slack and only just got his part in with 2 hours to spare.) ... I would have rathered just do it by myself.*

Some students described having minimal interaction with other students, despite a desire to connect with peers. As anticipated, these students felt isolated, lonely and disconnected from the University community, affecting their enjoyment and engagement. A lack of opportunities for face-to-face interaction, furthermore, prompted some to feel they may be better off studying on campus. Ryan, for instance, described his disappointment at experiencing less peer interaction than desired during his first semester:

*No [peer interaction], which certainly doesn't help and is quite a hinderance ... Was more isolating than expected.*

As many expected, students found it useful to process their thinking around particular aspects of their course through peer interaction. They found it helpful to know others experienced similar difficulties, and learned from responses to others' questions on discussion boards. Knowing others struggled with similar challenges normalised students' concerns and reduced their anxiety. Students especially appreciated the personal support, experience and advice offered by peers. Some had joined Facebook groups, which offered an informal means to connect outside the course, and a valued social support network. Students made friends and felt connected to their peers, which facilitated a sense of belonging to the University community. In some cases, students were also able to meet face-to-face with nearby students and formed study groups. These students appreciated the opportunity to interact in person, which further reduced their sense of isolation. As students progressed in the course and got to know other students, they increasingly

recognised the benefits of connecting with peers, felt more comfortable interacting online, and made greater efforts to engage with their peers. Eliza, for instance, described the value of peer support and connection during her first year:

*It was good to connect with others ... reading others [sic] comments that they were struggling too made me feel better.*

### ***Contributions to peer interaction***

Students described several factors having contributed to experiences of peer interaction during their first year, corresponding to a number of other *MAC-ICE* themes. Other aspects of *Interaction*, specifically encouragement, facilitation and moderation of discussions by *instructors*, enabled students to connect and communicate in meaningful ways. Ruby, for instance, described her instructor's guidance having helped to manage challenges associated with group work during her second semester:

*We also had a great FAQs thread going where the lecturer asked us to answer questions before she'd get involved.*

The *Environment*, specifically *online delivery*, also contributed to peer interaction. Students experienced limited opportunities for peer interaction where they were separated by substantial distances or time zones. This experience compared poorly with presumed on-campus experiences. As a result, students felt especially isolated as online students, disconnected from the University community. Kristi, for instance, described feeling disadvantaged by the lack of peer interaction as an online student in her first semester:

*We miss out on all of the usual sharing tha [sic] students would have as they worked together.*

### ***Outcomes of peer interaction***

Following their first and second semesters, students described peer interaction as having influenced the perceived quality of their OSE. Peer collaboration and support enhanced students' learning; with the capacity to connect

with peers providing students with much needed academic support. Advice and reassurance from other students increased the depth of knowledge acquired, as described by Annette in her first semester:

*If one student asked a question, we could all see the answer.*

Relying on peers for group work was perceived to have influenced students' academic performance. Poor contributions from others affected the quality and timely completion of group assignments. Where group members did not contribute effectively, or were poorly organised, students felt they would have performed better had they completed assignments independently. Catherine, for instance, described feeling her performance was reduced as a result of poor peer contributions to a second semester assignment:

*Would have got a higher result if I had don't [sic] it by myself.*

In addition, peer collaboration and support were perceived to have contributed to students' satisfaction. Being able to connect with peers provided students with valued support, and facilitated an enjoyable and satisfying experience. Where students felt isolated or found collaboration with other students to be unhelpful, on the other hand, their satisfaction reduced, as described by Brooke in her second semester:

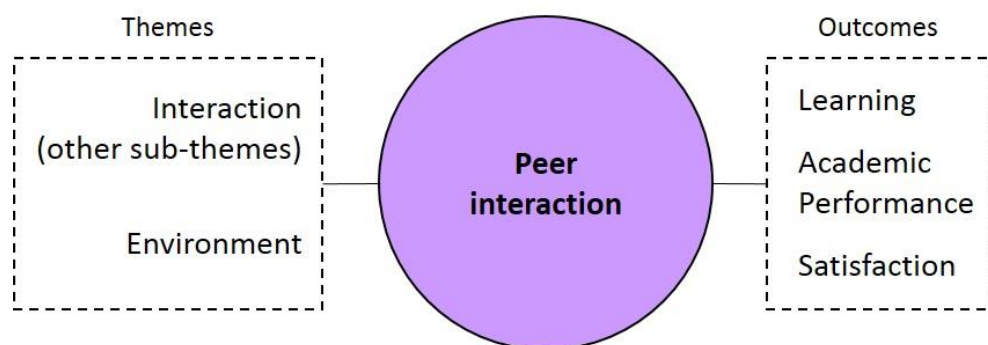
*I am a bit disappointed in the lack of interaction.*

### ***Peer interaction summary***

The above descriptions suggest students' lived experiences of OE, and the perceived quality of their OSE, were influenced by peer interaction. Peer interaction engaged and assisted online students to understand course content, while reducing isolation and anxiety (Cohen et al., 2011; Oh & Kim, 2016; Savitz-Romer & Jager-Hyman, 2009; Wilcox et al., 2005). Students appreciated opportunities to connect with other students through formal and informal learning activities (Antonis et al., 2011; Breen et al., 2003; Knowles & Kerkman, 2007; Lambrinidis, 2014; Shackelford & Maxwell, 2012). Compulsory interaction and group work was challenging and burdensome, however, particularly in terms of logistics and

navigating group dynamics or differences (Delahunty et al., 2014; O'Shea et al., 2015; Tomas et al., 2015). It is noted, nonetheless, that group work is a frequent challenge for many students, including those in on-campus HE, and some of these difficulties could be put down to early learning experiences of working in a team (Loh & Smyth, 2010). Assessed participation in discussion forums also lead to superficial or repetitive posting (Debozy, 2009), adding to the already time consuming exercise of monitoring discussions. In addition, online students valued opportunities for face-to-face interaction, and actively sought out opportunities to interact with peers beyond their course (Trentin, 2002). The absence of meaningful peer interaction, however, increased online students' isolation, and reduced their engagement with the online course (Delahunty et al., 2014).

Figure 31 summarises the perceived connections between *peer interaction* and other *MAC-ICE* themes (left), as well as the online student outcomes influenced by peer interaction (right). Difficulties associated with *online delivery (Environment)*, in particular, may limit opportunities for online students to interact meaningfully (Beard & Harper, 2002; Moody, 2004; Serhan, 2010). Guidance and encouragement from *instructors (Interaction)*, nonetheless, may facilitate and enhance peer interaction opportunities (Delahunty et al., 2014; Lambrinidis, 2014; Loh & Smyth, 2010; Oh & Kim, 2016).



*Figure 31.* The perceived connections between *peer interaction*, other *MAC-ICE* themes (left), and online student outcomes (right).

Students' experience of peer interaction may subsequently influence the perceived quality of their OSE. The depth of online students' learning may be influenced by advice and reassurance from other students (Antonis et al., 2011;

Crosling et al., 2009; Paechter et al., 2010). Peer interaction may also influence online students' academic performance (Nagel, 2009; Paulus & Roberts, 2006), with poor peer contributions jeopardising performance on group assignments. Students may not anticipate group work or the dependence on input from other students, furthermore, and may find this especially frustrating, particularly when others are disorganised or do not contribute to the desired standard. Finally, students may feel lonely and disconnected from their institution where contact with other students is limited or less meaningful; and may feel disappointed with their experience as a result. Where students are able to interact in meaningful ways, both within and outside of their course, on the other hand, they may feel more satisfied with their OSE (Kuo et al., 2013; Lo et al., 2011; Sinclair, 2011).

### **Interaction and the Online Student Experience**

Participants' experiences suggest *Interaction* with course *content*, *peers* and *instructors* may inform students' lived experiences of OE, and the perceived quality of their OSE. Online students expect to receive meaningful guidance, feedback and support from their instructors, with dynamic and engaging course materials. The extent and quality of instruction and materials provided can be inconsistent, however, making it difficult to set accurate expectations, and frustrating students. While some instructors are especially helpful and responsive, providing dynamic and appealing learning materials/activities, others may be notably absent or offer insufficient direction, relying on static, text-based or outdated materials. In the absence of meaningful and engaging instruction and materials, online students can lose motivation, become lost and feel frustrated (Antonis et al., 2011; Beard & Harper, 2002; Palmer & Holt, 2009).

Alongside interaction with instructors and course materials, online students desire to connect with *peers* for social and academic support (Antonis et al., 2011; Breen et al., 2003; Knowles & Kerkman, 2007). They may subsequently interact with peers through informal and formal learning activities; or connect outside their course through social media and/or face-to-face study groups. Compulsory discussion posts and group work, nonetheless, can be substantially challenging and time consuming (Loh & Smyth, 2010; O'Shea et al., 2015; Tomas et al., 2015); and,

in some cases, students may not feel these contribute meaningfully to their experience.

Figure 32 summarises the perceived connections between *Interaction*, other *MAC-ICE* themes (left), and online student outcomes (right). Online students' *Ability* may influence their experience of *instructor interaction*; and the institutional *Environment* may contribute to students' experience of *peer interaction*. *Interaction* sub-themes may also be somewhat interconnected, with *instructor interaction* contributing to *peer interaction*.

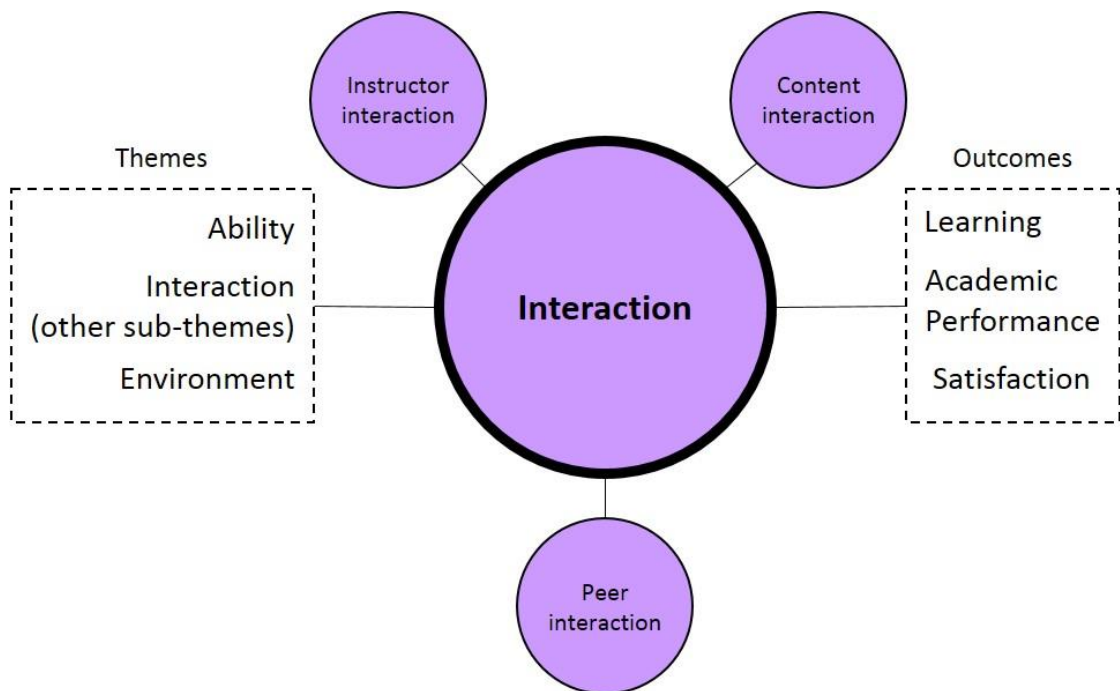


Figure 32. The perceived connections between *Interaction*; other *MAC-ICE* themes (left); and online student outcomes (right).

*Interaction* may subsequently play an important role in the perceived quality of the OSE. Specifically, *Interaction* may inform online students' perceived learning, academic performance, and satisfaction. Text-based *content* may be hard for online students to digest, encouraging surface learning strategies (Huang et al., 2011; Jones et al., 2009); while dynamic and interactive learning materials, and real-world assessment, may engage online students and encourage deep learning strategies (Huang et al., 2011; Oh & Kim, 2016; Signor & Moore, 2014; Stone, 2017; Tomas et al., 2015). Advice and reassurance from *peers* may further support online

students' learning (Huang et al., 2011; Paechter et al., 2010; Parsons-Pollard et al., 2008). Meaningful and regular guidance, feedback and support from *instructors* may also enable online students to effectively address assessment criteria, and perform well as a result (Boud, 2010; Elliott & Adams, 2011). Poor peer contributions, however, may jeopardise students' academic performance in group assignments (Nagel, 2009; Paulus & Roberts, 2006). Where students find their *instructors* to be encouraging, active and responsive; *peer interaction* meaningful; and course *content* engaging, consistent with their expectations, on the other hand, they may find their experience enjoyable and satisfying (Dziuban et al., 2015; Ilgaz & Gulbahar, 2015; Paechter et al., 2010).

## **Curriculum**

Participants identified the curriculum as an important component of their lived experiences of OE, and the quality of their OSE. The *Curriculum* theme referred to the content and processes through which students engaged with their course, including course design and configuration. Students discussed specific learning activities and assessments, as well as their course's structure and difficulty more generally. Though the specific nature of content, learning activities and assessments were discussed extensively during interviews, it was students' expressed feelings or responses to the curriculum, which were taken to elicit the greatest meaning. The *Curriculum* theme, illustrated in Figure 33, incorporated expectations and experiences (sub-themes) of course *flexibility*, *challenge* and *relevance*. Each *Curriculum* sub-theme is discussed below, with connections between each sub-theme and other *MAC-ICE* themes, and the perceived contribution of each *Curriculum* sub-theme to students' outcomes, then summarised.

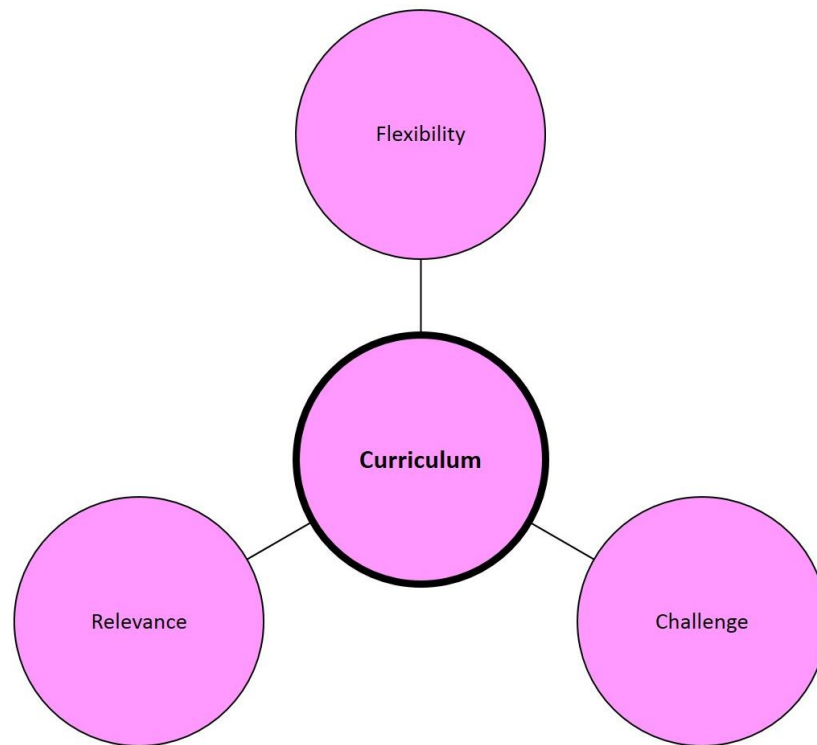


Figure 33. The *Curriculum* theme, incorporating sub-themes of *flexibility*, *challenge*, and *relevance*.

### **Flexibility**

*Flexibility* formed an important component of the *Curriculum* theme, and of students' lived experiences of OE. Students' expectations and experiences of *flexibility*, contributing themes, and the perceived contribution of flexibility to online students' outcomes, are discussed below. A summary of the lived experience of *flexibility*, and its perceived connection to other experiences and online student outcomes, is then presented.

#### ***Expectations of flexibility***

Students expected to participate at their own pace and convenience. They anticipated their course would be delivered as a series of modules or tasks, which they would work through in preparation for assignments or exams. They expected completion of these modules/tasks would be optional, though encouraged and likely helpful for assessment. Laverne, for instance, described her expectations of discretionary participation:



*I don't have to attend anything really ... Its [sic] up to me what I do and don't do I guess, but I am aware of the "uni recommendations".*

### ***Experiences of flexibility***

Upon commencing, students found the degree of curriculum flexibility varied between units. Some units, as students had expected, permitted them to work through modules at their own pace. Students appreciated this flexibility in enabling them to study when and how they wanted, allowing students to minimise interruptions and distractions. Flexibility also enabled students to spend more time on difficult activities, and less on easier tasks. In addition, students valued opportunities to spend more time studying during quieter periods, allowing them to get ahead and offering a buffer for busier times later in semester. Brenda, for instance, described the benefit of being able to work ahead in her second semester:

*One external unit in first semester put up 5 weeks in the first week and it was great, you could get in front and then relax and do it at your own pace.*

Other units required students to engage in regular activities throughout the semester. Students were surprised to discover they had to participate at particular times, with regular compulsory activities and strict assignment due dates. For some, this regular participation prompted them to engage, and helped keep them on track. For others, firm scheduling conflicted with work schedules or other obligations (see also *Simultaneous priorities*, page 167). Teresa, for instance, described her frustration at synchronous participation requirements during her first semester:

*Offcampus students are offcampus for a reason - we don't have time to attend lects [sic] and tuts [sic].*

### ***Contributions to flexibility***

Students described the *Environment*, specifically the application of *technology*, to have contributed to their experience of flexibility. Though still limited by the course structure, innovative and reliable technology provided participatory flexibility and convenience. Mobile technology, in particular, facilitated anywhere,

anytime access to learning materials and activities, enabling students to study at their desired time and place. Laverne, for instance, described the convenience provided by technology during her first year:

*I love technology as a platform for adult education. It makes life a lot easier.*

### ***Outcomes of flexibility***

Following their first and second semesters, students described curriculum flexibility as having influenced the perceived quality of their OSE. Specifically, the inability to advance at their own pace prevented students from adequately completing activities when they were most available, jeopardising their capacity to perform their best. Where students were unable to comply with compulsory synchronous learning activities, they also lost participation marks, as described by Gabriel in his first semester:

*We had to participate weekly in Discussion with other students, some weeks it just wasn't possible ... I got marked down due to it.*

Rigid course scheduling also prevented some students from completing their studies as intended. Some students desired to participate at a faster pace than permitted, by either progressing through the semester more quickly, or completing additional study periods during summer/winter breaks. Where these options were not available, students considered withdrawing to seek alternative programs that provided such opportunities. Mitchell, for instance, described the absence of a summer study period having affected his intended completion timeframe following his first semester:

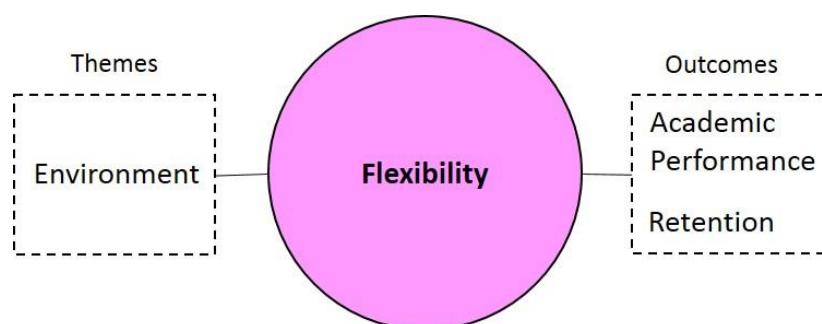
*Not having a summer term option surprised me a bit. Threw my plans out.*

### ***Flexibility summary***

The above descriptions suggest students' lived experiences of OE, and the perceived quality of their OSE, were influenced by curriculum flexibility. There was

no standard structure for online units, even within the same institution or course. Students expected time and pace flexibility and, where offered, this facilitated enhanced concentration and organisation (Heaton-Shrestha et al., 2009; Serhan, 2010). Synchronous participation, on the other hand, was challenging where not anticipated, or where it conflicted with other important commitments (Stone, 2017; The Concord Consortium, 2006). Strict scheduling helped keep some students on track, nonetheless; with too much flexibility posing organisational challenges (Kikuchi, 2006; Osborne et al., 2009).

Figure 34 summarises the perceived connections between *flexibility* and other *MAC-ICE* themes (left), as well as the online student outcomes influenced by this flexibility (right). Flexibility during an online course may be supported by the application of reliable and innovative *technology* (*Environment*; Heaton-Shrestha et al., 2009; Serhan, 2010; Waschull, 2001), though a strict course structure may limit the permitted pace of participation. Online courses that require students to participate at specific times (*inflexibility*) may challenge students' capacity to participate, and, therefore, to perform their best. Strict scheduling may also frustrate and inconvenience online students, forcing them to choose between study and other important commitments. In addition, a lack of opportunities to progress at the desired pace may prompt online students to withdraw and seek alternative, more flexible programs. Participants expected OE would offer substantial flexibility and convenience, furthermore, with few anticipating synchronous participation requirements. This mismatch between online students' expectations and experiences, therefore, may also influence subsequent academic performance and retention.



*Figure 34.* The perceived connections between *flexibility*, other *MAC-ICE* themes (left), and online student outcomes (right).

## **Challenge**

The experience of *challenge* formed an important component of *Curriculum*, and students' lived experiences of OE. Students' expectations and experiences of *challenge* are discussed below, with contributing themes examined, before discussing the perceived contribution of challenge to online students' outcomes. The lived experience of *challenge*, and its perceived connection to other experiences and online student outcomes, are then summarised.

### ***Expectations of challenge***

Students expected their course would be difficult and anticipated struggling with particular topics or activities, particularly mathematics (see also *Content knowledge*, page 150). Social science students also anticipated their studies might be psychologically or personally difficult, challenging their attitudes toward particular issues. Students were somewhat positive about these difficulties, however, noting a challenging curriculum would be important for completion and success to be meaningful. Andrea, for instance, described her anticipation of being challenged:

*I know its [sic] going to be difficult. I am expecting it to challenge my own beliefs and ideas ... a challenge but one I'm looking forward to.*

### ***Experiences of challenge***

As students expected, they found their course academically and personally challenging. Students struggled with particular topics, especially mathematics, finding associated units and assessment especially difficult. Students also experienced personal challenges when forced to consider new or different perspectives, which threatened prior assumptions. As anticipated, students valued these challenges, however, describing them as critical to their engagement; and overcoming associated difficulties as necessary to appreciate the significance of their achievements. Eliza, for instance, described intellectual and personal challenges in her second semester:

*The math as I said before was challenging and parts of the exercises for self development were challenging too.*

In contrast, some students felt their curriculum lacked sufficient challenge, particularly during their first semester. These students found the curriculum too easy, considering it of little benefit to their education or career aspirations. In the absence of sufficient challenge, students became bored, disengaged, and questioned the value of their studies. Keven, for instance, described the lack of challenge in his first semester:

*Units are designed for school leavers not mature age entry so to me they are a waste of time ... Not difficult really.*

As students progressed, they anticipated their course would steadily become more difficult. They expressed concern about potential future units, recognising they were likely to face ongoing challenges, based on experiences to date. Students also anticipated the standard of work expected of them was likely to increase as they became more experienced learners. Samantha, for instance, described expecting her course may become more difficult as she progresses beyond her second semester:

*Think the lecturers will expect more to [sic] and mark accordingly.*

### ***Contributions to challenge***

Students described several factors having contributed to their experience of challenge, corresponding to a number of other *MAC-ICE* themes. Firstly, students' *Ability*, with respect to their *academic skills*, *computer literacy* and *content knowledge*, influenced perceived curriculum difficulty. Weak academic and technical skills reduced students' ability to cope with complex content, and provided additional challenges to overcome. Limited prior knowledge increased the amount some students had to learn, while substantial prior knowledge meant insufficient challenge for others. Strong academic and technical skills, and familiarity with applicable topics, nonetheless, facilitated an easier curriculum. Alana, for instance, described her content familiarity reducing the difficulty of her first semester:

*Somethings [sic] I learned very easily because I found I could relate to the topic.*

*Interaction* with *instructors*, *content* and *peers*, also contributed to the degree of challenge experienced. Meaningful instructor interaction, together with dynamic and interactive learning materials, helped students digest and manage complex content. Insufficient or vague guidance and feedback from instructors, along with static, unappealing materials and a lack of meaningful peer interaction, on the other hand, limited students' capacity to understand complex content. Brenda, for instance, described the difficulty posed by complex written materials during her first semester:

*It is very difficult ... some of the readings are quite heavily worded.*

In addition, the *Environment*, specifically the conditions associated with *online delivery*, contributed to the degree of challenge experienced. Poor online conditions, compared with presumed on-campus conditions, provided additional complexity and difficulties for students to overcome. Following her second semester, for instance, Julie described feeling her course would have been less challenging had she studied on campus:

*I think on campus would of [sic] been easier.*

### ***Outcomes of challenge***

Following their first and second semesters, students described the degree of challenge having influenced the perceived quality of their OSE. Where students found content straightforward, they were able to learn well, while complex concepts, particularly mathematics, were difficult for students to grasp. Brooke, for instance, described feeling overwhelmed by the challenging curriculum during her first semester:

*I sometimes feel a bit out of my depth when we get into economics 'stuff'.*

Challenge was also cited as contributing to students' academic performance. Where students found their course especially difficult, their capacity to complete associated assessment was limited. They struggled to cope with more difficult or complex concepts, particularly mathematics, and this was reflected in their results. Teresa, for instance, described realising it may be harder than anticipated to achieve high marks following her first semester:

*After receiving my marks (I got really low), I realised that it's not as easy as it seemed to be.*

In addition, curriculum challenge was described to have contributed to students' satisfaction. Where students coped well with heavy workloads and complex content, they felt especially proud of their achievements. Insufficient challenge, on the other hand, disappointed students; while too great a challenge, or excessive workloads, overwhelmed students and jeopardised enjoyment of their course. Samantha, for instance, described this delicate balance of challenge in facilitating satisfaction with her second semester:

*Have liked the topics and how they challenged, only sometimes too challenging.*

### ***Challenge summary***

The above descriptions suggest students' lived experiences of OE, and the perceived quality of their OSE, were influenced by the degree of challenge experienced. The online courses offered substantial academic, as well as personal, challenges (Knowles & Kerkman, 2007; Packham et al., 2004); with mathematics, in particular, felt to be difficult (Antonis et al., 2011; Ashcraft & Krause, 2007; Xu & Jaggars, 2011), along with topics that challenged students' beliefs. Such challenges were anticipated and appreciated, however, with course difficulty seen to validate the significance of students' achievement (Bradford, 2011; Ciampa, 2014; Sinclair, 2011). Conversely, insufficient challenge disengaged online students, and associated curriculum was perceived to offer little value (Bradford, 2011).

Figure 35 summarises the perceived connections between *challenge* and other *MAC-ICE* themes (left), as well as the online student outcomes influenced by this challenge (right). The challenge provided by an online course may be influenced by students' *academic skills*, *computer literacy* and *content knowledge* (*Ability*; Antonis et al., 2011; Ashcraft & Krause, 2007; Wilson, Chur-Hansen, Marshall, & Air, 2011); as well as *Interaction* with *instructors*, *content* and *peers* (Alexander et al., 2003; Beard & Harper, 2002; Cohen et al., 2011); and the conditions provided by *online delivery* (*Environment*; Alexander et al., 2003; Huang et al., 2011; Packham et

al., 2004). Curriculum challenge may subsequently inform the perceived quality of their OSE, with straightforward content easier for students to understand, and, therefore, to acquire associated knowledge. Difficult content, on the other hand, may be hard for students to cope with, limiting their learning. Overly simplistic content, furthermore, may be easy to understand, yet offer little challenge; and may be unlikely to extend students' knowledge substantially. Where students are faced with complex and difficult content, particularly mathematics, they may also struggle to complete associated assessment, resulting in lower grades. Online students may anticipate and hope their course will be challenging, nonetheless, and where these expectations are met, they may feel satisfied, having overcome difficulties and achieved something that was not easy (Sinclair, 2011). Where their course is not as difficult as expected, or is too challenging, however, online students may feel less satisfied with their experience. A potential mismatch between students' expectations and experiences, therefore, may also influence perceived quality of their OSE.



Figure 35. The perceived connections between *challenge*, other MAC-ICE themes (left), and online student outcomes (right).

## Relevance

*Curriculum relevance* formed an important aspect of students' lived experiences of OE. Students' expectations and experiences of *relevance*, contributing themes, and the perceived contribution of relevance to online students' outcomes, are discussed below. The lived experience of *relevance*, and its perceived connection to other experiences and online student outcomes, are then summarised.



### ***Expectations of relevance***

Students expected their course would be relevant to their chosen career and future employment; and hoped to learn and develop skills applicable to associated real-world situations. They anticipated the curriculum would also reflect particular industry certification requirements. In addition, students expected to learn about learning itself, and to develop skills they would need to apply in subsequent semesters. Carolyn, for instance, described her expectation of gaining knowledge applicable to her career:

*Hopefully will allow me to gain the knowledge to further my career prospects.*

### ***Experiences of relevance***

As students expected, they largely found the curriculum applicable to their career and employment aspirations, and felt units complemented each other well. In some cases, students were already able to apply learning in concurrent employment (see also *Rewards*, page 136). After completing only one or two semesters, students had also begun to think about further study opportunities. Layla, for instance, described her first semester curriculum's relevance to her professional situation:

*It extended my knowledge and provided a more professional approach for me to add to my existing skills.*

Some students, however, did not find the curriculum especially applicable to their career ambitions, particularly where they were already experienced in a related field and found their experience to contradict what was taught. These students struggled to integrate their learning with professional experiences, finding assessment overly abstract or academic, with practical application unclear. Where students did not feel they were learning anything sufficiently relevant, they questioned the value of their course in helping them achieve their goals. Justin, for instance, described his frustration at conflicts between the curriculum and his professional experience, during his first semester:

*I FOUND THE COURSE AT TIMES TOTALLY IRRELEVANT TO WHAT I DO AS A NURSE DAY TO DAY [Caps intended].*

### ***Contributions to relevance***

Students identified their *Motivation*, including the experience of *rewards*, as having contributed to curriculum relevance. Opportunities to realise substantial benefits early in their course, and the promise of rewards upon completion, demonstrated potential application of the curriculum to students' aspirations. A lack of clear and tangible rewards, on the other hand, prompted students to question the relevance of learning activities. Catherine, for instance, described her desire to have been able to realise more relevant professional rewards from her first semester:

*I would have liked to learn things that I could apply at work.*

### ***Outcomes of relevance***

Following their first and second semesters, students described curriculum relevance as having influenced the perceived quality of their OSE. Overly theoretical content, in the absence of opportunities to apply knowledge, resulted in superficial learning. Practical activities, and real-world opportunities to apply learning in relevant ways, on the other hand, helped students absorb content more thoroughly. Zander, for instance, described how the use of relevant, real-world examples helped him learn during his first semester:

*It was the specific examples and such that helped to engrain the knowledge.*

Where students attained new skills and knowledge relevant to their aspirations, they were highly satisfied. Clear and strong application of learning activities to students' aspirations reinforced the worthiness of their course. Unclear application, on the other hand, led students to question the value of their course. Students struggled to see the relevance of some activities or assessments, and questioned the value of investing their time, energy and money, for no clear benefit. Where students already worked in related industries, furthermore, they felt their time was wasted learning things they already knew. Students also questioned the focus on

theory in the absence of practical application; and some began to wonder if their completion would offer sufficient employment advantage, particularly in more competitive fields. Brooke, for instance, described her disappointment at having gained limited relevant and new knowledge during her first year:

*I had hoped to get more out of it. Much of the info is duplicated and is not new to me.*

A lack of clear application to students' career or employment aspirations further prompted them to consider withdrawing from their online course. Where students felt the course would not provide any meaningful advantage to their career, they decided not to continue. Some had identified alternative programs, which were more closely aligned to their aspirations, and sought these instead. Ruby, for instance, described considering an alternative, more relevant course following her second semester:

*I am looking at changing degrees ... I decided that business doesn't actually add anything to where I want to go with my career.*

### ***Relevance summary***

The above descriptions suggest students' lived experiences of OE, and the perceived quality of their OSE, were influenced by curriculum relevance. Online students expected and valued experiences that were clearly relevant to their employment and career aspirations, as well as units that complemented each other and scaffolded their learning (Drew, 1998; Kim & Frick, 2011; Lopez-Bonilla et al., 2012; Orrell, 2011). Clear application of learning activities were central to students' perceived value of a course (Ali et al., 2004; Bradford, 2011; Park & Choi, 2009; Yager, 2000). With long-term career goals firmly in mind, furthermore, interest in further study arose quite early in students' learning journey (Jepsen & Varhegyi, 2011). The application of learning activities was not always clear to students, however, prompting them to question associated investments of time and effort. Where relevance was not apparent, or contradicted students' professional experience, courses were judged to be of low value (Bradford, 2011).

Figure 36 summarises the perceived connections between *relevance* and other *MAC-ICE* themes (left), as well as the online student outcomes influenced by this relevance (right). Curriculum relevance may be supported by the experience and promise of *rewards* (*Motivation*), and real-world application (Bradford, 2011; Park & Choi, 2009; Pridham & Deed, 2012; Yager, 2000). Where the curriculum is clearly applicable to students' aspirations, learning may be increased; while limited or unclear application may result in superficial learning (Huang et al., 2011; Tomas et al., 2015). Students may expect their course to offer substantial benefits to future employment and careers, and where these expectations are met (or exceeded), they are able to clearly connect their learning to their aspirations, and may feel more satisfied with their experience (Calli et al., 2013; Lee, 2010; Sinclaire, 2011). In contrast, where a course fails to meet students' relevance expectations, they may find it less worthwhile, and feel dissatisfied. The extent to which online students' relevance expectations are met, therefore, may also inform their satisfaction (Bhattacharjee, 2001; Lee, 2010; Wu et al., 2006). In addition, online students may judge the investment required (financial and otherwise) to be excessive, where their course fails to offer clear or sufficient application to their aspirations, prompting them to withdraw, potentially to pursue more applicable programs (Chang et al., 2015; Chiu et al., 2007; Lee, 2010; Park & Choi, 2009).

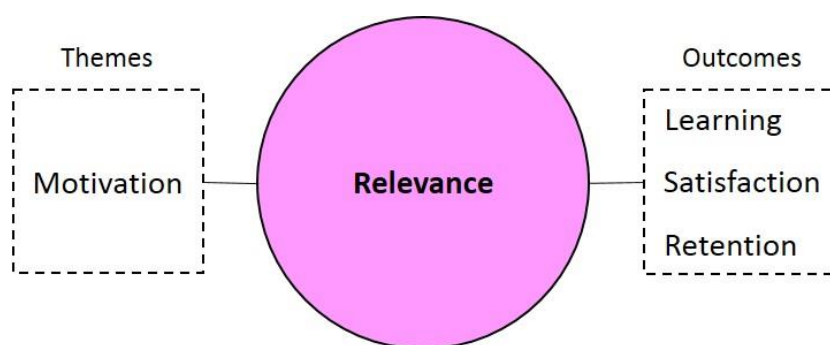


Figure 36. The perceived connections between *relevance*, other *MAC-ICE* themes (left), and online student outcomes (right).

### Curriculum and the Online Student Experience

Participants' experiences suggest *Curriculum* plays an important role in students' lived experiences of OE, and the perceived quality of their OSE. Online

students may expect their curriculum to be *flexible, challenging* and *relevant* (Kim & Frick, 2011; Serhan, 2010; Stone et al., 2016). Experiences can be inconsistent with these expectations, however, with some units providing substantial flexibility, challenge, and clear relevance to students' aspirations; while others may require participation at specific times, and/or may not teach students anything sufficiently new or overtly relevant. This diversity of experiences, again, makes it difficult for students to set accurate expectations of OE.

Where provided, *flexibility* to study at convenient times can help students focus and make the most of their time (Case & Davidson, 2011; Heaton-Shrestha et al., 2009; Serhan, 2010). Scheduled learning activities can help keep students engaged and on-track (Kikuchi, 2006), yet pose difficulties for some students in managing competing priorities (The Concord Consortium, 2006). An expectation of flexibility, furthermore, may be reinforced by promotional materials and marketing messages, which imply OE facilitates flexibility to study alongside other commitments (e.g., Athabasca University, 2016; Charles Sturt University, 2016; Case University, 2016). It appears not all programs adhere to this expected level of flexibility, suggesting such messages may be misleading, at least in some instances.

Online students accurately anticipate and welcome *challenges* associated with their curriculum. They may struggle with some aspects of their course, particularly mathematical content (Antonis et al., 2011; Ashcraft & Krause, 2007; Xu & Jaggars, 2011), and in questioning preconceptions on social issues. Nonetheless, students value opportunities to overcome these difficulties (Bradford, 2011; Ciampa, 2014; Sinclair, 2011). The perceived importance of challenge contradicts the notion students might select OE as an easier option to on-campus education (DiRienzo & Lilly, 2014; Hyllegard et al., 2008; Moody, 2004). Instead, online students may be aware of potential challenges and see difficulty as a measure of how valuable their course is (Bradford, 2011). Units can be insufficiently challenging for some students, however, prompting them to question the value of their studies.

*Relevance* of the curriculum to students' career and employment aspirations may be essential to their engagement and investment of requisite effort. Online

students actively seek courses they expect relate to their aspirations (Drew, 1998; Kim & Frick, 2011; Lopez-Bonilla et al., 2012). Where such expectations are not met, they can perceive their experience to be wasted effort. Online courses that demonstrate clear and consistent relevance, on the other hand, may engage, inspire and motivate students to persist, reinforcing the value of completion (Park & Choi, 2009).

Figure 37 summarises the perceived connections between *Curriculum*, other *MAC-ICE* themes (left), and online student outcomes (right). Online students' *Motivation* may influence their experience of *Curriculum relevance*, while students' *Ability* may inform their experience of *challenge*. Institutional *Interaction* may contribute to *challenge*; and the *Environment* may influence *Curriculum flexibility* and *challenge*.

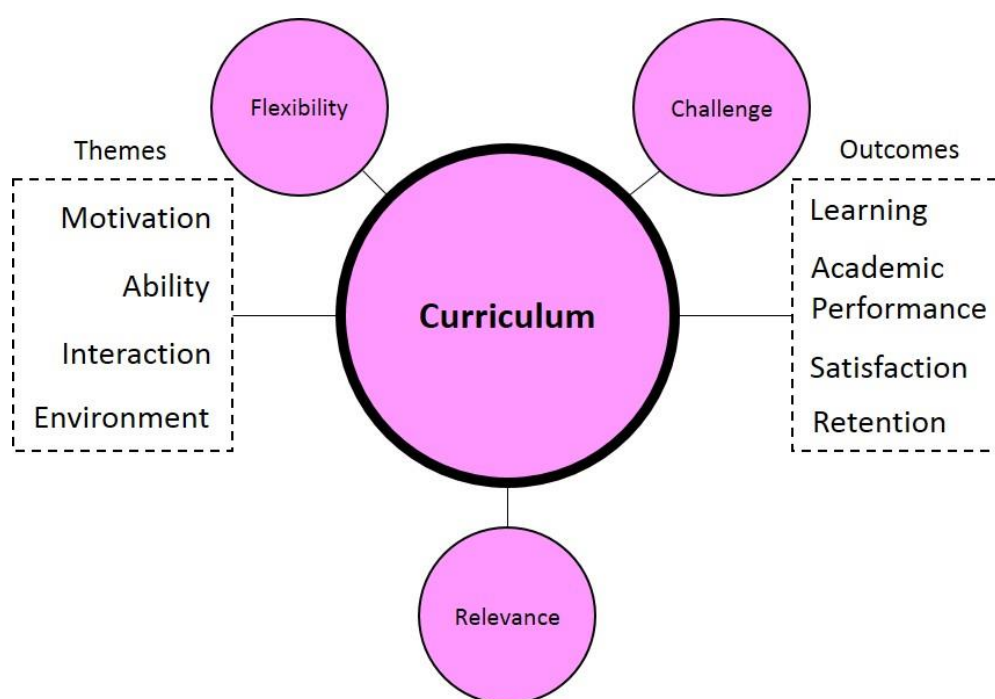


Figure 37. The perceived connections between *Curriculum*; other *MAC-ICE* themes (left); and online student outcomes (right).

The curriculum may subsequently play an important role in the perceived quality of the OSE. Manageable course content, which is clearly applicable to students' aspirations, may facilitate deeper learning (Huang et al., 2011; Tomas et al., 2015). Overly simplistic content may be easy for students to understand, yet may

offer very little *challenge* and be unlikely to extend their knowledge substantially. Complex and difficult content, particularly mathematics (Ashcraft & Krause, 2007), as well as requirements to participate at a specific times (*inflexibility*) may also limit students' academic performance. In addition, student satisfaction may be influenced by perceived *challenge*, and *relevance* to students' career and employment aspirations (Calli et al., 2013; Lee, 2010; Sinclair, 2011). The extent to which students' curriculum expectations are met, may further inform satisfaction with their OSE (Bhattacharjee, 2001; Lee, 2010; Wu et al., 2006). Strict scheduling (*inflexibility*) may also frustrate online students, forcing them to choose between their studies and other important commitments. A lack of opportunities to progress at the desired pace, and/or insufficient application to students' aspirations, may subsequently prompt online students to withdraw and seek alternative, more *flexible* and *relevant* programs (Chang et al., 2015; Chiu et al., 2007; Lee, 2010; Park & Choi, 2009).

## **Environment**

Participants identified the online learning environment as an important component of their lived experiences of OE, and a quality OSE. The *Environment* theme referred to the infrastructure and systems through which students accessed and engaged with learning activities. The *Environment* theme, illustrated in Figure 38, incorporated students' expectations and experiences (sub-themes) of how *online delivery* might differ to on-campus education; as well as the role *technology* played in their experience. Each *Environment* sub-theme is discussed below, and connections between each sub-theme and other *MAC-ICE* themes, and the perceived contribution of each *Environment* sub-theme to students' outcomes, summarised.

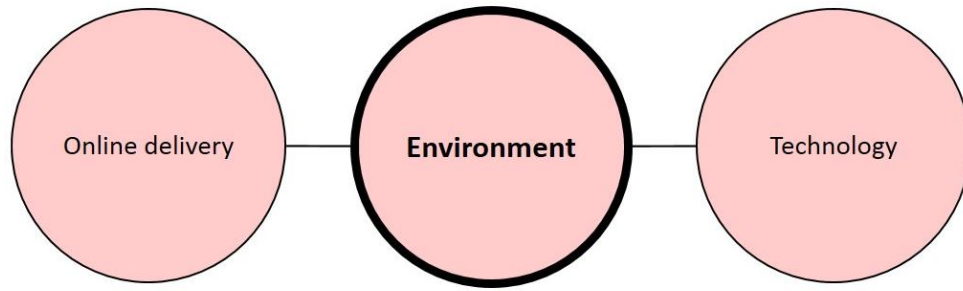


Figure 38. The *Environment* theme, incorporating sub-themes of *online delivery* and *technology*.

### **Online delivery**

*Online delivery* formed an important element of the *Environment* theme, and of students' lived experiences of OE. *Online delivery* specifically referred to the online conditions through which students accessed and engaged with their learning activities, as distinct from on-campus delivery. Students' expectations and experiences of *online delivery*, contributing themes, and the perceived contribution of online delivery to online students' outcomes, are discussed below. A summary of the lived experience of *online delivery*, and its perceived connection to other experiences and online student outcomes, is then presented.

#### ***Expectations of online delivery***

Students discussed the conditions under which they expected to access and engage with learning activities, in reference to prior experiences or assumptions of what it might be like to study on campus. They expected their course would run in a similar manner to on-campus courses, with materials and communication simply delivered electronically, and activities completed at a distance, rather than through attendance at classes on campus. Some students, nonetheless, hoped to attend the occasional lecture on campus. Sean, for instance, described his expectations in reference to equivalent on-campus conditions:

*Basically I have all the stuff to learn, without the tutor/lecturer physically being there ... I would 'assume' like any other person doing this course 'internally', I wouldn't perceive a difference.*



### *Experiences of online delivery*

Following commencement, students perceived their online learning conditions to be lower quality than anticipated, and in comparison to on-campus education; believing they had been disadvantaged by studying online. Students felt their experience was undervalued and somewhat neglected by the University, with institutional efforts seemingly focused on supporting and guiding *on-campus* students. In particular, students felt OE required greater organisation and self-direction than on-campus education, posing additional challenges they felt were not sufficiently acknowledged or addressed by the University. Marcus, for instance, described feeling the University had not prioritised online students during his first semester:

*The impression I got (rightly or wrongly) with [the case University] was that the lights were out, and servicing online students was not a high priority.*

Where feasible, some students chose to visit campuses to access instructors, support services or facilities. Some subsequently chose to enrol in on-campus units in an effort to avoid difficulties associated with online delivery. Where able to access a campus, students found these experiences beneficial, facilitating an easier experience than learning exclusively online. Valentina, for instance, described the benefits of attending some on-campus lectures during her second semester:

*I did go on campus with a few of the lectures ... it was much better going to the lecture and having the visual of the lecturer than listening to it with just a myraid of colours swirling on the screen.*

Having formed the perception online delivery represented a less supported learning experience; students questioned the value in this considerable financial investment. They had not anticipated the significant costs associated with OE, and assumed online delivery would be substantially cheaper. Students were subsequently concerned about the cost of completing their online course, and felt this was excessive for the services received, as highlighted by Annette following her first semester:

*The cost of the online subject I was studying was very expensive.*

### ***Contributions to online delivery***

Students described several factors having contributed to online delivery conditions, corresponding to a number of other *MAC-ICE* themes. Firstly, students felt neglected and disadvantaged by irregular, limited or vague *Interaction* with *instructors*, which compared poorly to presumed on-campus instruction. Martin, for instance, described the importance of instructor contact and communication in online delivery, following his second semester:

*Instruction is probably the most influential factor on deciding one's fate in online studies ... Prompt replies to communication were the most critical element for me.*

In addition, other aspects of the *Environment* contributed to online delivery. A heavy dependence on unreliable or problematic systems and equipment (*technology*) added further complications and barriers to participation, which were presumed not to be experienced by on-campus students. James, for instance, described the significant efforts he had gone to access learning materials as a first year online student:

*I had to hack the interface to download the lectures ... half the time on the [discussion] board I was giving IT advice to the other students so they could get access [sic] to things.*

It should also be noted that while these two themes (*Interaction* and *Environment*) were described to contribute to online delivery, the resultant online conditions may subsequently contribute to a number of further complications, including poor *concentration* (*Motivation*, see page 118); a heavy reliance on *self-regulation* (*Ability*, see page 159); a propensity for competing *priorities* (*Circumstances*, see page 167); limited *peer Interaction* (see page 205); and increased *challenge* (*Curriculum*, see page 218).

### *Outcomes of online delivery*

Following their first and second semesters, students described online delivery as having influenced the perceived quality of their OSE. Students perceived the University's expectations of online students to be somewhat excessive, with poorer conditions compared to on-campus education influencing their academic performance. They felt OE was more self-directed, more difficult, more isolating, and less supported, than on-campus education, and should therefore have been graded more generously. They felt unfairly punished as online students, having to meet the same standards as their on-campus peers, despite experiencing greater challenges, as described by Lavern following her second semester:

*It is when you are marked along side the on campus students and they are often fed directly what it is required.*

Students also identified online delivery to have contributed to their dissatisfaction. Students were disappointed with their experience when compared with what might have been offered on campus. They questioned their courses' value for money, feeling disadvantaged in particular, by limited access to instructors and other students. Students felt their experience, and the anticipated benefits of OE, furthermore, were insufficient justification for the high cost of their study. Valentina, for instance, described disappointment with her first semester experience as an online student:

*Actually it was pretty shitty doing it online ... satisfied? No I am definately [sic] not.*

Some students acknowledged, nonetheless, that without online delivery, they might have been unable to attempt their studies at all. Recognising online delivery was the only way they could complete a university qualification, students were grateful for the opportunity. OE enabled them to achieve their aspirations, and, consequently, students such as Lisa, felt satisfied with their OSE:

*Well I've been able to do something that would otherwise be impossible, so in that regard I'm satisfied.*

Some students withdrew or transferred to alternative courses, in pursuit of on-campus programs. These students anticipated they would have a better chance of succeeding, and would enjoy their studies more, if they were able to participate on campus. Aidan, for instance, described contemplating changing courses in order to participate on campus, following his first semester:

*[Another university] is offering the course here at the uni center. I may consider switching as I get to interact with students.*

### ***Online delivery summary***

The above descriptions suggest students' lived experiences of OE, and the perceived quality of their OSE, were influenced by online (as opposed to on-campus) delivery. The OSE was evaluated by students through a comparison to presumed on-campus experiences. OE was perceived as requiring more work (Alexander et al., 2003; Huang et al., 2011; Tanner et al., 2009), greater concentration, better time management (Alexander et al., 2003; Huang et al., 2011), and more self-regulation (Serhan, 2010; Tanner et al., 2009), than on-campus equivalents; despite attracting similar costs. In addition, a lack of synchronous communication in online programs posed further difficulties and delays in instructor interaction (Serhan, 2010; Siebert et al., 2006; Tanner et al., 2009). Students felt neglected by their university and forced to rely heavily on self-management to survive (Serhan, 2010; Siebert et al., 2006). The challenges specific to online delivery, furthermore, were not consistently or effectively acknowledged and addressed by their university.

Figure 39 summarises the perceived connections between *online delivery* and other *MAC-ICE* themes (left), as well as the online student outcomes influenced by online delivery. Limited *Interaction* with *instructors* (Serhan, 2010), and *technical (Environment)* difficulties (Antonis et al., 2011; Parsons-Pollard et al., 2008; Serhan, 2010), in particular, may create additional challenges for online students, facilitating poorer conditions than equivalent on-campus programs. Where students feel unsupported or unable to cope with the specific challenges of online delivery, the quality of their OSE may be limited. Where students do not have access to equivalent conditions and support as their on-campus peers, they may face greater challenges and feel less able to complete their assessment effectively, resulting in

weaker academic performance (Australian Government, 2017a; Sansone et al., 2012; Waschull, 2001). Online students may feel especially isolated, under-supported, and frustrated by technical difficulties, believing on-campus programs would offer better opportunities, and a more satisfying experience. Though students may anticipate challenges associated with studying online, the quality of online delivery may be poorer than expected, when compared to presumed on-campus conditions. Inconsistencies between students' perceived quality of online delivery and their university's expectations of online students, as well as high costs, may lead online students to feel exploited. Where OE is the only viable option to engage in university studies, however, students may be satisfied they are at least granted this opportunity. Where the conditions associated with online delivery do not meet students' needs and expectations, nonetheless, they may attempt to access campus facilities, and/or decide to abandon OE altogether, seeking an on-campus course instead.

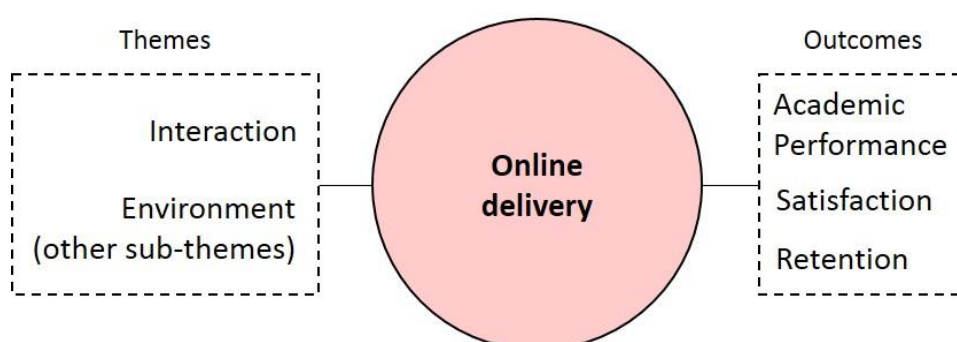


Figure 39. The perceived connections between *online delivery*, other MAC-ICE themes (left), and online student outcomes (right).

## Technology

*Technology* played an important role in the *Environment*, and students' lived experiences of OE. Students' expectations and experiences of *technology*, contributing themes, and the perceived contribution of technology to online students' outcomes, are discussed below. The lived experience of *technology*, and its perceived connection to other experiences and online student outcomes, are then summarised.

### ***Expectations of technology***

Students discussed the reliability and application of systems, software and equipment in facilitating access to learning materials and activities. They expected requisite technology would be accessible, and associated systems/tools easy to use. Students were generally excited about using technology for their learning, though some recognised they may not yet be proficient in all techniques (see also *Computer literacy*, page 147). Holly, for instance, described her enthusiasm for the application of technology to her studies:

*I think that is perfectly normal and exciting I love the idea actually.*

Students expected particular hardware and software, as well as a reliable internet connection, would be important for their studies. They expected to rely heavily on technology and systems working effectively, but anticipated technical difficulties might occur. Students expressed concerns about the possibility of hardware breakdowns, software errors, connection difficulties and system failures; and the potential impact of these on their studies. Some had plans in place for if/when they experienced technical difficulties, and expected the case University, and/or significant others, would assist them where these prevented students from completing or submitting assessments (see also *Peripheral support*, page 173). Delores, for instance, described the expected impact of technical difficulties, and associated understanding from instructors:

*My concern is the system going down, or even for system back up ...  
online student highly depend on the system to do their work ... if essays  
were due I would hope that submission wouldn't be classified as late.*

### ***Experiences of technology***

As students expected, they found technology valuable in facilitating their participation. Technology provided convenience through the portability of learning materials and flexibility to participate at opportune times. The capacity to access online reference materials was especially valuable in preparing for assignments, as described by Laverne during her first semester:

*Fantastic - I have found it easy to use and to navigate ... I can take my laptop and as long as I can access the internet, I have access to all I need to complete my work.*

Students raised some concerns, however, about the lack of proactive guidance and assistance in using technology. They struggled to navigate OE systems initially, and were particularly frustrated by inconsistencies in the layout of the LMS, which made it difficult to locate important information. Some students, such as Kristi, also felt technology was not used as effectively as it could have during her second semester:

*They are updating software etc - but not using technology to engage - we could be doing all kinds of things on line ... it's disappointing that they are not putting just a bit more energy into innovating around online study.*

Students also experienced technical difficulties during their course. Though anticipated, these influenced students' capacity to manage their time effectively, access important information and submit assignments. Students found it challenging to rely on technology, but with experience began to anticipate potential problems, and found the case University to be accommodating where issues were outside students' control. In some cases, nonetheless, technology was felt to be poorly managed by instructors, causing compatibility and access issues. Some students were able to implement complex work-arounds as a result of their own technical knowledge, to avoid this jeopardising their studies. Nevertheless, students continued to find such issues especially frustrating, as described by Alana following her second semester:

*A real nightmare. Blackboard was down so many times ... It was really frustrating!*

### ***Contributions to technology***

Students described several factors having contributed to their experience of technology during their first year, corresponding to a number of other *MAC-ICE*

themes. Students *Ability*, specifically weak *computer literacy*, influenced students' capacity to navigate and use required systems/software appropriately. Eliza, for instance, described realising the extent of computer literacy she needed to use requisite technology during her first semester:

*I was so unfamiliar with technology I had no idea there was so much I didn't know.*

*Interaction* with *instructors* also contributed to student's experience of technology. A lack of guidance or assistance from instructors affected students' ability to navigate systems, software and equipment required for their studies; and limited their application of associated technology. Catherine, for instance, described how the lack of instructor guidance limited her use of technology during her first semester:

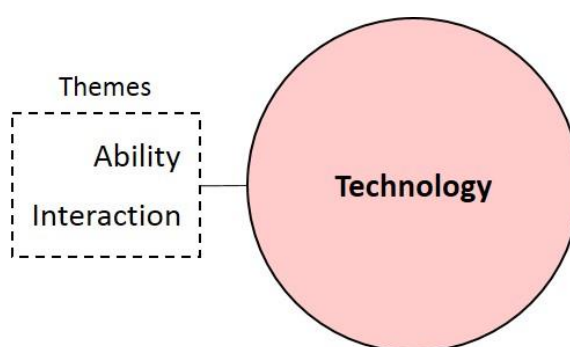
*It would have been great if there had been online tutorials to explain how to use Blackboard and the Library etc. I think I was quite overwhelmed to begin with trying to work everything out on my own.*

### ***Technology summary***

The above descriptions suggest students' lived experiences of OE were influenced by the application of reliable and innovative technology. Technology facilitated convenience in OE through portability and access to a variety of information (Ali et al., 2004; Beard & Harper, 2002; Heaton-Shrestha et al., 2009). Assistance was desired, however, in adapting to the online environment, including guidance in using required systems and navigating available information (Mupinga et al., 2006; Oomen-Early & Murphy, 2009; Saadé & Kira, 2009). An inconsistent layout within the LMS, in particular, caused confusion and wasted precious time (Cho, Cheng, & Lai, 2009; Mills, 2015; Stone, 2017). In addition, some online units did not take full advantage of innovative technology. Technical difficulties and poor formatting of materials, furthermore, though somewhat anticipated, had a substantial and frustrating impact on students' capacity to organise their learning and access important information (Antonis et al., 2011; Buchan & Swann, 2007; Packham et al., 2004).



Figure 40 summarises the perceived connections between *technology* and other *MAC-ICE* themes (left). Students' *computer literacy (Ability)*, along with *instructor guidance (Interaction)*, may assist students to access and use technology appropriately. While the challenges associated with technical difficulties appeared to cause students substantial frustration, technology was not explicitly described to have directly influenced the perceived quality of students' OSE.



*Figure 40.* The perceived connection between *technology* and other *MAC-ICE* themes (left).

### **Environment and the Online Student Experience**

Participants' experiences show the *Environment* informs students' lived experiences of OE, and, to some extent, the perceived quality of their OSE. Online students anticipate a reliance on *technology*, including particular hardware and software for their learning. They can be disappointed with the quality of *online delivery*, however, where this is felt to be inferior to what they have experienced previously, or assume they would experience in on-campus education (Alexander et al., 2003; Huang et al., 2011; Tanner et al., 2009).

The extent of technical reliance, as well as the complexity and volatility of the OE *Environment* may be underestimated by online students. Students can struggle to navigate their way through required systems in their initial weeks, and may experience substantial technical difficulties, which limit their capacity to engage with, and/or to complete learning activities (Antonis et al., 2011; Buchan & Swann, 2007; Packham et al., 2004). The opportunity afforded by *technology*, in terms of portability and convenience, nonetheless, may be seen as a significant benefit to OE (Ali et al., 2004; Beard & Harper, 2002; Heaton-Shrestha et al., 2009).

Figure 41 summarises the perceived connections between *Environment*, other *MAC-ICE* themes (left), and online student outcomes (right). Online students' *Ability* may influence students' experience of *technology*, while institutional *Interaction* may contribute to students' experience of both *online delivery* and *technology*. *Environment* sub-themes may also be somewhat interconnected, with *technology* contributing to *online delivery*.

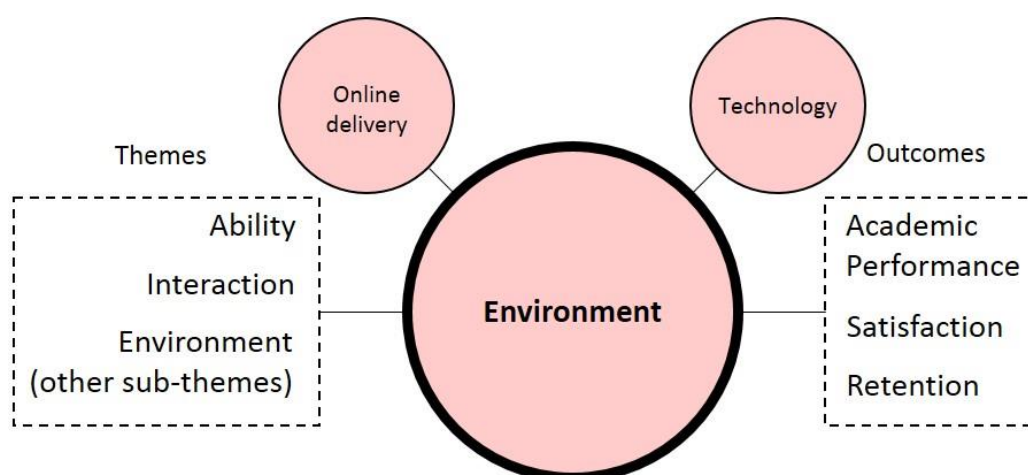


Figure 41. The perceived connections between *Environment*; other *MAC-ICE* themes (left); and online student outcomes (right).

The *Environment* may subsequently play a role in the perceived quality of the OSE. Where students do not have access to conditions and support perceived to be equivalent to their on-campus peers (*online delivery*), they may perform worse in their assessment (Breen et al., 2003; Waschull, 2001; Wynegar & Fenster, 2009); and feel disadvantaged and dissatisfied as online students (Palmer & Holt, 2009; Parsons-Pollard et al., 2008; Waschull, 2001). Online students may come to believe on-campus programs would offer better opportunities, and consequently seek out campus facilities, and/or on-campus courses instead. Where OE is the only viable option to engage in university studies, however, students may be satisfied they are granted this opportunity (Nonis & Fenner, 2011; Stone et al., 2016; Waschull, 2001).

### Summary of institution themes

In addition to learner *Motivation*, *Ability* and *Circumstances*, discussed in Chapter Four, participants' experiences suggest online students have expectations

and experiences of their course and university; reflecting *Interaction*, *Curriculum* and *Environment*. The reciprocal connection, engagement and relationships students experience during their course (*Interaction*), may be a substantial component of students' lived experiences of OE, with respect to the extent of opportunities provided to: contact and communicate with instructors (*instructor interaction*); engage with learning materials and activities (*content interaction*); and connect and communicate with other students (*peer interaction*). The content and processes through which online students are expected to engage with their studies (*Curriculum*), may also play an important role in students' lived experiences, with regard to the: required participation and pace of learning (*flexibility*); degree of difficulty (*challenge*); and application of learning activities to students' employment/career aspirations (*relevance*). Finally, students' experiences of the *Environment*, or the infrastructure and systems associated with their online learning activities, incorporates the online conditions through which students access and engage with their studies, as compared to presumed on-campus conditions (*online delivery*); and the reliable and innovative application of systems, software and equipment to facilitate access to their studies (*technology*). The *Interaction*, *Curriculum*, *Environment*, or 'ICE' themes, and corresponding sub-themes, together form a thematic structure for participants' institution-related lived experiences of OE, illustrated in Figure 42.

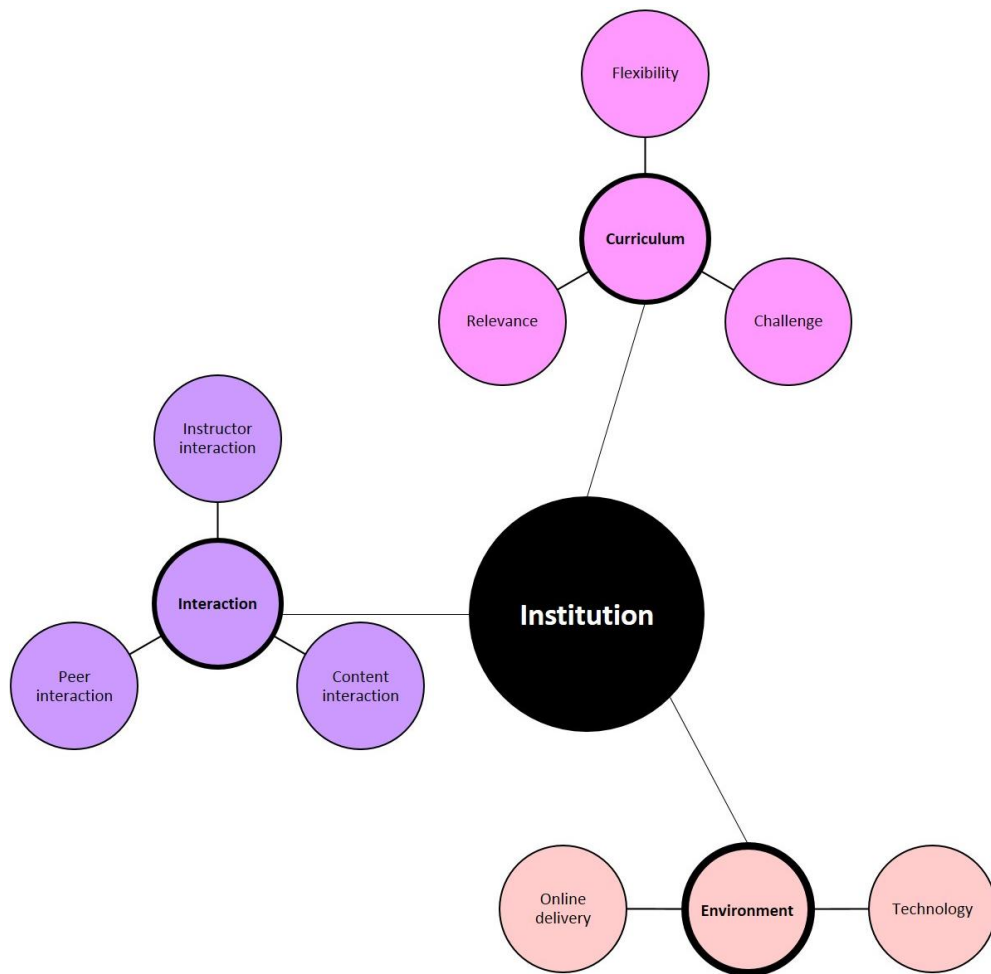


Figure 42. The thematic structure for students' institution-related lived experiences of OE, incorporating *Interaction*, *Curriculum* and *Environment (ICE)* themes and sub-themes.

These institutional themes may play an important role in the OSE. Table 5 summarises the *MAC-ICE* themes (left) perceived to contribute to institutional *Interaction*, *Curriculum* and *Environment*; as well as the online student outcomes influenced by these institutional themes (right), forming a matrix of thematic connections. Reading from left to right, perceived connections are indicated by a cross. This institutional thematic matrix shows institutional *Interaction* may be influenced by students' *Ability*, as well as other aspects of *Interaction*, and *Environment*. The *Curriculum* may be influenced by students' *Motivation* and *Ability*, as well as institutional *Interaction* and *Environment*. The *Environment* may be influenced by students' *Ability* and institutional *Interaction*, as well as other aspects of the *Environment*.

Table 5: Perceived Connections between Institutional (ICE) Themes, other MAC-ICE Themes, and Online Student Outcomes

	Institutional themes			Online student outcomes			
	Interaction	Curriculum	Environment	Learning	Academic performance	Satisfaction	Retention
Motivation	X						
Ability	X	X	X				
Circumstances							
Interaction	X	X	X	X	X	X	
Curriculum				X	X	X	X
Environment	X	X	X		X	X	X

Institution themes may subsequently influence students' perceived learning, academic performance, satisfaction and retention. Specifically, institutional *Interaction* may contribute to online students' learning, academic performance and satisfaction. *Content* and *peer interaction*, in particular, may contribute to online students' learning (Huang et al., 2011; Paechter et al., 2010; Stone, 2017); while *interaction* with *instructors* and *peers* may contribute to students' academic performance (Elliott & Adams, 2011; Nagel, 2009; Paulus & Roberts, 2006). Online student satisfaction may be influenced by *instructor*, *content* and *peer interaction* (Dziuban et al., 2015; Paechter et al., 2010).

The *Curriculum* may also contribute to the perceived quality of the OSE, with regard to students' learning, academic performance, satisfaction and retention. Online students' learning may be influenced by the degree of *challenge* provided by the curriculum (Ali et al., 2004; Almala, 2005). Academic performance may be influenced by curriculum *challenge* and *flexibility*. Online student satisfaction may be influenced by course *relevance* (Calli et al., 2013; Lee, 2010; Sinclair, 2011), and *challenge* (Sinclair, 2011); and the degree to which curriculum expectations are met (Bhattacharjee, 2001; Lee, 2010; Wu et al., 2006). Online student retention, subsequently, may be influenced by curriculum *relevance* and *flexibility* (Chang et al., 2015; Chiu et al., 2007; Lee, 2010).

Finally, the *Environment* may inform the perceived quality of the OSE, with regard to academic performance, satisfaction and retention. Specifically, online students' academic performance and satisfaction may be influenced by *online delivery* (Australian Government, 2017a; Parsons-Pollard et al., 2008; Sansone et al., 2012). Students may subsequently withdraw from an online course where they wish to avoid *online delivery* (Australian Government, 2017a; Hyllegard et al., 2008; Xu & Jaggars, 2011), in pursuit of on-campus alternatives.

### **Connections between online student outcomes**

In addition to the contributions of each *MAC-ICE* theme to online student outcomes, each of the four outcomes were somewhat interconnected. In many cases, it was difficult to separate students' experiences from specific outcomes; with the

interpretation and evaluation of these outcomes deeply entwined with how students understood and described their experiences. Though retention and academic performance outcomes were simple to identify, for instance, these were often discussed in the context of students' learning, and/or satisfaction. The following section discusses the reported connections between these outcomes.

### **Learning and academic performance**

The experience of effective learning was perceived to have contributed to students' academic performance. Where students learned deeply, and were able to apply their knowledge in assessment, they achieved stronger results. Where students were unable to learn concepts well, on the other hand, they found it difficult to complete associated assignments, and performed poorly. While superficial learning sometimes allowed students to meet the minimum requirements to pass their assessment, this was rarely sufficient to achieve high marks. Ruby, for instance, described having learned only what was necessary to pass her first semester:

*I learnt enough to get me through.*

### **Learning and satisfaction**

The experience of effective learning was also perceived to have influenced students' satisfaction. Students expected to learn a great deal from their studies, and where these expectations were met, or exceeded, they felt satisfied with their experience. Having acquired new skills and overcome substantial challenges, students felt proud of what they had achieved, and reassured they were capable of succeeding. As a result of this pride, students expressed strong satisfaction with their OSE. In contrast, where students did not feel they had learned anything sufficiently new or useful, they felt disappointed and dissatisfied with their experience, as described by Ruby, following her first semester:

*I would prefer a better understanding of the content.*

### **Academic performance and satisfaction**

Students' achievement of desired grades was also described to have contributed to their satisfaction. Students were disappointed with their experience where their results were weaker than expected/desired, especially in their first semester. Where they achieved strong results, on the other hand, exceeding their expectations, students felt especially proud of what they had achieved, and deeply satisfied with their experience, as described by Brenda, following her second semester:

*As soon as I get [sic] my results I forgot all my complaints.*

### **Academic performance and retention**

Students' performance was described to have contributed to their persistence. Where students were disappointed with their results, they considered withdrawing, doubting their likelihood of performing well enough to pursue desired qualifications or careers. The value of continuing in their course was questioned; with the requisite effort perceived to exceed the benefits, and anticipated return on investment seen as low. Where students expected to perform poorly, furthermore, some, such as Kevin, elected to withdraw early (in his first semester), to avoid failing:

*Instead of risking a fail I withdrew.*

### **Satisfaction and retention**

Finally, students' satisfaction contributed to their decisions to persist. Experiences that had not lived up to their expectations prompted students to question the value in completing their course. Where they found their experience disappointing or seemingly of little value, students decided to withdraw, potentially in pursuit of more fitting programs. Marcus, for instance, described substantial disappointment with his first semester having influenced his decision to withdraw:

*I'm now looking at an internationally recognised qualification of higher standing ... with fees that are less than [the case University's]!*



### **Summary of connections between online student outcomes**

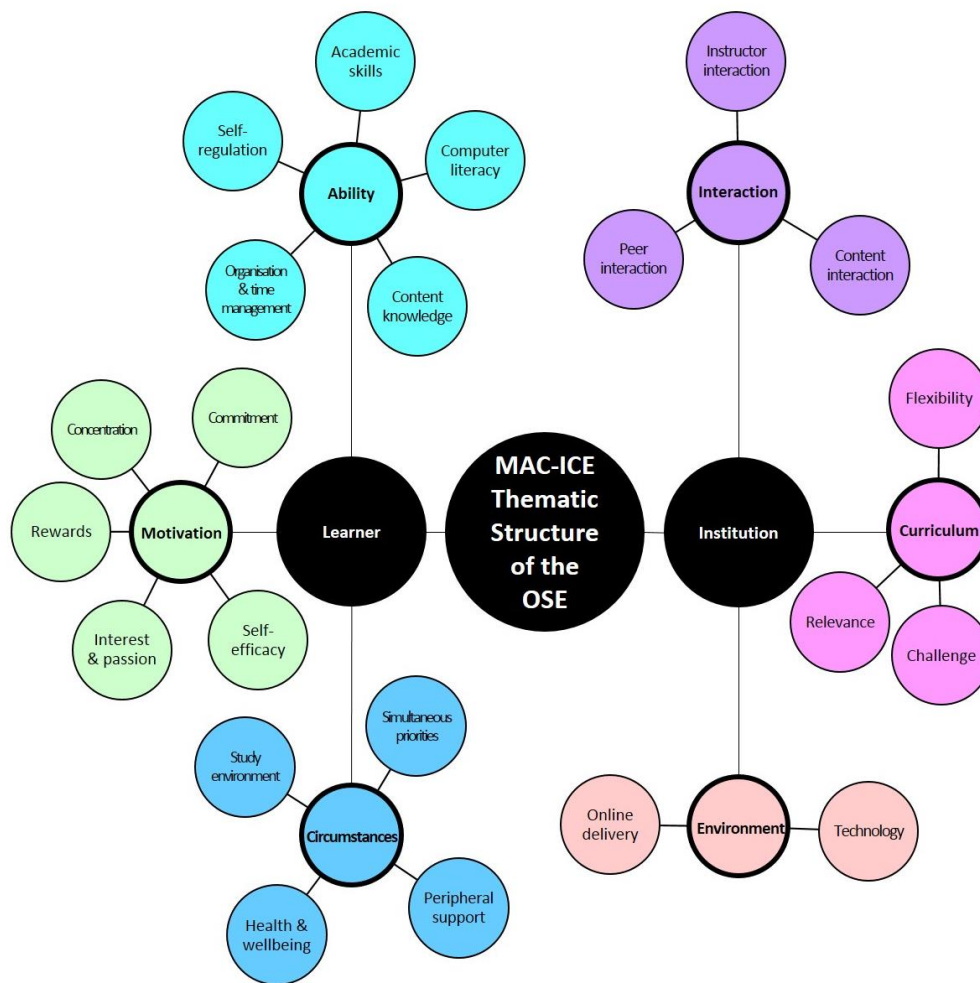
Participants' experiences suggest online students' outcomes are interconnected. Online students' academic performance may be influenced by the depth of knowledge acquired during their course. Where students learn deeply, they may apply their knowledge effectively to assessments, and perform well as a result. In contrast, where students do not understand particular content, or learn superficially, they may struggle to complete associated assessment to a high standard, and achieve lower grades.

Students' satisfaction may be influenced by the depth of learning acquired during their online course (Lo et al., 2011), and their academic performance (Cherry et al., 2003; Chiu et al., 2007; Dziuban et al., 2015). Where students learn deeply and perform well, they may find their experience more worthwhile, and feel proud and satisfied with their experience as a result. In contrast, where students are unable to acquire sufficient new knowledge, their expectations may be challenged, and they may feel less satisfied with their OSE, questioning the value of their course (Bhattacharjee, 2001; Lee, 2010; Wu et al., 2006). Where students perform worse than desired or expected, furthermore, they may feel disappointed with their OSE.

Online students' retention may be connected to their academic performance (Cochran et al., 2014; Willging & Johnson, 2009), and satisfaction (Calli et al., 2013; Chiu et al., 2007; Lee & Choi, 2013; Park & Choi, 2009). Where students do not achieve the marks they desire, they may question if their course is right for them, and consider withdrawing. Where students fail assessments, furthermore, they may choose to withdraw to avoid a recorded fail grade for associated units. In addition, where students are dissatisfied with their experience, they may withdraw from their course, potentially to pursue alternative programs they feel would offer a more satisfying experience. With students' satisfaction potentially connected to their learning and academic performance outcomes, furthermore, all student outcomes, and contributing themes, may play a role in online student retention.

### **A thematic structure of the total Online Student Experience**

Each of the identified learner and institutional themes, and corresponding sub-themes, represent an important component of students' expectations and experiences of OE, contributing to online student outcomes. Collectively, learner *Motivation, Ability, and Circumstances* (*MAC* themes), combined with institutional *Interaction, Curriculum, and Environment* (*ICE* themes), describe students' lived experiences of OE. Bringing together the learner and institutional themes, a full '*MAC-ICE*' thematic structure of the OSE, illustrated in Figure 43, can be visualised.



*Figure 43. The MAC-ICE thematic structure of the OSE; incorporating learner Motivation, Ability and Circumstances, combined with institutional Interaction, Curriculum and Environment.*

This *MAC-ICE* thematic structure positions both the learner and their institution at the core of students' lived experiences, each playing a distinct role in facilitating a quality OSE. Any theme alone, however, may be insufficient to explain the total OSE, with each experience, and subsequent online student outcome, combining to inform a quality OSE. The *MAC-ICE* themes contributing to each online student outcome are summarised below, reflecting students' perceptions of a quality OSE.

### **A MAC-ICE structure of learning**

Learner *Motivation* and *Ability*, together with institutional *Interaction* and *Curriculum*, were perceived to contribute directly to the depth of students' learning. Specifically, students' *concentration* and prior *content knowledge* enhanced their capacity to acquire new knowledge; while dynamic and *interactive course content* and meaningful *peer interaction*, a manageable *challenge* and clearly *relevant* activities, encouraged and supported students' to learn. Learner *Circumstances* and institutional *Environment*, however, were not perceived to contribute directly to the depth of students' learning.

All *MAC-ICE* themes were described to contribute *indirectly* to students' learning. In particular, students' *commitment, interest and rewards (Motivation)*; *academic skills, computer literacy, content knowledge, organisation and self-regulation (Ability)*; and *simultaneous priorities, peripheral support, health and study environment (Circumstances)*, contributed to experiences conducive to learning. Learning experiences were further enabled by *instructor, content and peer Interaction, flexibility (Curriculum)*, and strong *online delivery (Environment)*. These indirect themes contributed to the perceived quality of the OSE by facilitating conditions conducive to students' learning.

The above connections suggest there may be intrinsic and extrinsic contributions to online students' learning. Effective learning is not simply determined by online students' innate ability, or by the curriculum alone, but by a complex interplay of experiences, which may each facilitate or limit students' learning. In particular, where students are able to concentrate on their study, and are already somewhat familiar with the content prior to commencing, they may be well equipped to engage in deep learning strategies. An online course that offers dynamic and engaging content, meaningful peer interaction, a moderately challenging curriculum and clear relevance to students' aspirations, may further encourage and support students to acquire new knowledge. In contrast, learning may be jeopardised where online students have poor concentration or limited content knowledge, and where the institution offers primarily text-based materials, limited peer interaction, insufficient challenge or unclear application. Though students' *Circumstances* and

the *Environment* may not directly contribute to learning, furthermore, these may play an indirect role in facilitating experiences conducive to online students' learning.

### **A MAC-ICE structure of academic performance**

Learner *Motivation* and *Ability*, as well as institutional *Interaction*, *Curriculum* and *Environment*, were perceived to contribute directly to students' academic performance. Specifically, students' *concentration*, strong *academic skills* and good *time management*; combined with meaningful *instructor interaction* and a manageable *challenge*, enabled students to perform well. In contrast, poor *concentration*, weak *academic skills* and poor *time management*, limited or unhelpful *instructor* and *peer interaction*, *inflexibility* and excessive *challenge*, and poor *online delivery*, reduced students' capacity to meet assessment criteria, resulting in weaker academic performance. In addition, students' learning outcomes were described to have influenced their academic performance. Learner *Circumstances*, however, were not perceived to have directly contributed to students' academic performance.

All *MAC-ICE* themes were again described to contribute indirectly to students' academic performance. In particular, students' *concentration*, *commitment* and *interest and passion (Motivation)*; *academic skills*, *computer literacy*, *content knowledge*, *organisation and time management* and *self-regulation (Ability)*; and *simultaneous priorities*, *peripheral support*, *health and wellbeing* and *study environment (Circumstances)*, contributed indirectly to students' academic performance. In addition, students' performance was indirectly strengthened by *instructor/content/peer Interaction*; *flexibility*, *challenge* and *relevance (Curriculum)*; and *online delivery* and *technology (Environment)*. These sub-themes contributed to academic performance by facilitating experiences that supported students to achieve strong results.

The above connections demonstrate there may again be both learner and institutional factors that contribute to online students' academic performance. Where students are able to concentrate on their studies, possess strong academic skills, and manage their time effectively, they may perform well. These learner characteristics alone, however, may be insufficient to facilitate strong performance. Online courses

that offer meaningful instructor and peer interaction, some flexibility, a manageable challenge, and equivalent conditions to on-campus programs, may further enable online students to achieve strong results. Though students' *Circumstances* may not directly contribute to academic performance, furthermore, these may play an indirect role in facilitating experiences conducive to strong performance.

### **A MAC-ICE structure of student satisfaction**

Learner *Motivation* and *Circumstances*, as well as institutional *Interaction*, *Curriculum* and *Environment*, were perceived to contribute directly to students' satisfaction. Specifically, students' *concentration, commitment, self-efficacy, interest and passion, and rewards, and health and wellbeing*; as well as *instructor/content/peer interaction*, perceived *challenge and relevance* and *online delivery*, contributed to students' enjoyment, pride and perceived worthiness of their OSE. In addition, students' learning and academic performance outcomes influenced their satisfaction. Learner *Ability*, however, was not described to have directly contributed to students' satisfaction.

All *MAC-ICE* themes indirectly contributed to students' satisfaction. In particular, students' *concentration, commitment, interest and passion and rewards (Motivation)*; *academic skills, computer literacy, content knowledge, organisation and time management and self-regulation (Ability)*; and *simultaneous priorities, peripheral support, health and wellbeing and study environment (Circumstances)*, indirectly contributed to their satisfaction. In addition, satisfaction was indirectly facilitated by *instructor/content/peer Interaction*; *flexibility, challenge and relevance (Curriculum)*; and *online delivery and technology (Environment)*. These indirect sub-themes contributed to students' satisfaction by facilitating enjoyable and valued experiences.

The above connections suggest online student satisfaction may be connected in some way to all *MAC-ICE* sub-themes. In particular, where online students are: committed to their course; able to concentrate well; confident in their capacity to succeed; interested in course content; motivated by rewards; and in good health, they may enjoy their course and feel satisfied with their OSE. Supplementing this, online

courses that offer: meaningful interaction with peers and instructors; engaging course materials and activities; a moderate challenge with clear application; and quality online delivery, may enhance students' satisfaction. In addition, though students' *Ability* may not directly contribute to student satisfaction, it may play a role in indirectly facilitating experiences conducive to satisfaction. The vast range of indirect influences on satisfaction, furthermore, demonstrate the importance of all *MAC-ICE* themes in facilitating a satisfying OSE.

### **A MAC-ICE structure of retention**

Learner *Motivation, Ability* and *Circumstances*; institutional *Curriculum* and *Environment*; as well as students' academic performance and satisfaction, were described to have directly contributed to students' decisions to withdraw, or to reduce their study load. In particular, weak *commitment, academic skills* and *organisation and time management*, competing (*simultaneous*) *priorities* and poor *health and wellbeing* influenced students' capacity to persist. *Curriculum inflexibility* and unclear *relevance*, as well as poor *online delivery* conditions, also lead students to consider withdrawing from their course/unit. Institutional *Interaction*, however, was not described to have directly contributed to students' decisions to persist with their online course. Students' *Motivation, Ability* and *Circumstances*, as well as institutional *Interaction, Curriculum* and *Environment*, and all corresponding sub-themes, nonetheless, indirectly contributed to students' decisions to persist or withdraw. These indirect themes contributed to students' retention by facilitating experiences that encouraged/enabled or discouraged/prevented them from persisting.

The above connections suggest online student retention may be influenced by all *MAC-ICE* sub-themes and online student outcomes. In particular, where online students have: a weak commitment to their course; weak academic skills; poor time management; and/or struggle to manage competing priorities or poor health/stress, they may find it difficult to persist with their studies. Inflexible course design; unclear application to students' aspirations; and poor online conditions (compared to on campus), may also push students to withdraw from their online course, in pursuit of more suitable alternatives. Poor academic performance and a less satisfying

experience, furthermore, may lead students to consider the costs of persistence to outweigh the benefits, prompting them to withdraw. Again, while institutional *Interaction* was not reported to contribute directly to student retention, this theme may play an indirect role, contributing to the above experiences. All *MAC-ICE* sub-themes were reported to influence the above experiences, furthermore, and may indirectly contribute to retention; highlighting a need to address all these elements in considering online student retention.

### **A MAC-ICE thematic matrix for a quality Online Student Experience**

Bringing together the above findings, a complex and interconnected thematic matrix of experiences and outcomes emerges. Table 6 summarises the perceived connections between the *MAC-ICE* themes, and their direct contributions to online student outcomes; depicting a complex matrix of experiences that may combine to facilitate a quality OSE. Reading from left to right, perceived connections are indicated by a cross. *Motivation* is shown to contribute to other aspects of *Motivation*, as well as *Ability* and *Curriculum*; and directly contributes to online students' learning, academic performance, satisfaction and retention. *Ability* is shown to contribute to all *MAC-ICE* themes; as well as students' learning, academic performance and retention. *Circumstances* contribute to *Motivation*, *Ability* and *Circumstances*; as well as student satisfaction and retention. Institutional *Interaction* contributes to all *MAC-ICE* themes; as well as students' learning, academic performance and satisfaction. *Curriculum* contributes to *Motivation*, *Ability* and *Circumstances*; as well as student learning, academic performance, satisfaction and retention. *Environment* contributes to all *MAC-ICE* themes; as well as students' academic performance, satisfaction and retention. Finally, the outcome of learning is shown to contribute to students' academic performance and satisfaction; academic performance contributes to satisfaction and retention; and student satisfaction contributes to retention. This thematic matrix highlights the complexity and interconnected nature of the OSE, influenced by both learner and institutional experiences, with a range of experiences and outcomes combining to facilitate a quality OSE.



Table 6: The MAC-ICE Thematic Matrix of Perceived Contributions to a Quality Online Student Experience

	Learner			Institutional			Outcomes			
	Motivation	Ability	Circumstances	Interaction	Curriculum	Environment	Learning	Academic performance	Satisfaction	Retention
Motivation	X	X			X		X	X	X	X
Ability	X	X	X	X	X	X	X	X		X
Circumstances	X	X	X						X	X
Interaction	X	X	X	X	X	X	X	X	X	
Curriculum	X	X	X				X	X	X	X
Environment	X	X	X	X	X	X		X	X	X
Learning								X	X	
Academic performance									X	X
Satisfaction										X
Retention										

All *MAC-ICE* sub-themes were perceived to contribute indirectly to one or more outcomes. Of particular note, in addition to directly contributing to two of the four outcomes (academic performance and satisfaction), *instructor interaction* was perceived to influence 11 other experiences, many of which subsequently contributed to outcomes; suggesting this may be the single most influential sub-theme in the OSE. Similarly, *online delivery* was reported to contribute to three of the four outcomes (academic performance, satisfaction and retention), as well as six other sub-themes, highlighting the particular importance of facilitating equivalent online conditions to on-campus learning. *Peer interaction* also contributed to three of the four outcomes (learning, academic performance and satisfaction) and five other sub-themes, demonstrating the considerable value of meaningful peer connection and support. In addition, *peripheral support* was perceived to have contributed to seven other sub-themes, yet did not directly contribute to any outcomes; suggesting this experience could be overlooked, despite potentially playing a substantial (indirect) role in online student outcomes. *Content knowledge* and *flexibility* also played an important role, contributing to five sub-themes each, as well as learning, and academic performance and retention outcomes, respectively, while *technology* contributed to six other sub-themes, but did not directly contribute to any outcomes. The perceived contributions of these sub-themes to subsequent experiences demonstrates that each *MAC-ICE* theme may play an important role in the OSE. Overlooking one or more (sub) themes, therefore, may limit online student outcomes, and may have confounded prior research findings.

### **Summary of findings**

Through deep description of participants' expectations and experiences, Chapters Four and Five have provided an intricate and multifaceted portrayal of a group of first-year university students' expectations when commencing an online course, and a thorough account of how these students subsequently experienced OE. Comparing students' expectations and experiences shows online students may hold relatively accurate expectations of OE, with some notable exceptions. Online students may accurately predict potential challenges, furthermore, yet the extent of

such challenges may be underestimated, and awareness alone may be insufficient to prevent these from influencing their experience.

The findings have elicited a detailed description of the OSE, reflecting both learner and institutional aspects. The *MAC-ICE* thematic structure brings together six identified themes, each with several sub-themes that collectively described students' lived experiences of OE: *Motivation, Ability, Circumstances, Interaction, Curriculum* and *Environment*. Each of these themes played a role in the perceived quality of students' OSE. Specifically, online students' learning may be influenced by *Motivation, Ability, Interaction* and *Curriculum*. Academic performance may be influenced by *Motivation, Ability, Interaction, Curriculum* and *Environment*, as well as learning outcomes. Satisfaction may be influenced by *Motivation, Circumstances, Interaction, Curriculum* and *Environment*, as well as learning and academic performance outcomes. Finally, online student retention may be influenced by *Motivation, Ability, Circumstances, Curriculum* and *Environment*, as well as academic performance and satisfaction outcomes.

The following chapter reflects on the findings discussed in Chapters Four and Five, presenting the interpretation and implications of the present research. Students' lived experiences of OE, and the potential role of these experiences in facilitating a quality OSE, are interpreted in the context of applicable theory and prior research. Implications for theory and practice are then discussed.

## CHAPTER 6: Interpretation and Implications of the Research Findings

Reflecting on the findings presented in Chapters Four and Five, this chapter discusses implications for theory and practice. Participants' lived experiences of OE provide important insights into online students' expectations, experiences and outcomes, and how these might contribute to a quality OSE. The chapter begins by summarising the key findings, before discussing their implications in the context of prior research, and for CLT, ECT, and Kember's Longitudinal-process Model of Drop-out from Distance Education (1989). Practical implications are then discussed, presenting opportunities to enhance the OSE through an understanding of the learner and institutional themes, which may contribute to online students' learning, academic performance, satisfaction and retention.

### A MAC-ICE thematic structure of the Online Student Experience

The present research described students' lived experiences of OE, in the context of their first year of study at an Australian public university. Online students' expectations influenced their construction of, and attribution of meaning to these lived experiences, which subsequently influenced the perceived quality of their OSE. Specifically, students' lived experiences of OE reflected six themes, each playing a role in online student outcomes: *Motivation, Ability, Circumstances, Interaction, Curriculum* and *Environment*. The following section summarises the key findings of the present research in respect of the three research questions.

#### **Research Question 1: *What is the lived experience of OE, in the context of the first year of study at an Australian public university?***

The findings suggest students' lived experiences of OE can be described by six themes, each with several sub-themes, incorporating both learner and institution components. Students may experience OE through their own *Motivation, Ability* and *Circumstances* (MAC themes), in addition to the *Interaction, Curriculum* and *Environment* (ICE themes), facilitated by their institution. These lived experiences of OE were visualised as a thematic structure: the MAC-ICE thematic structure of the

OSE, shown again in Figure 44, illustrating the range of learner and institution experiences contributing to first-year university students' lived experiences of OE.

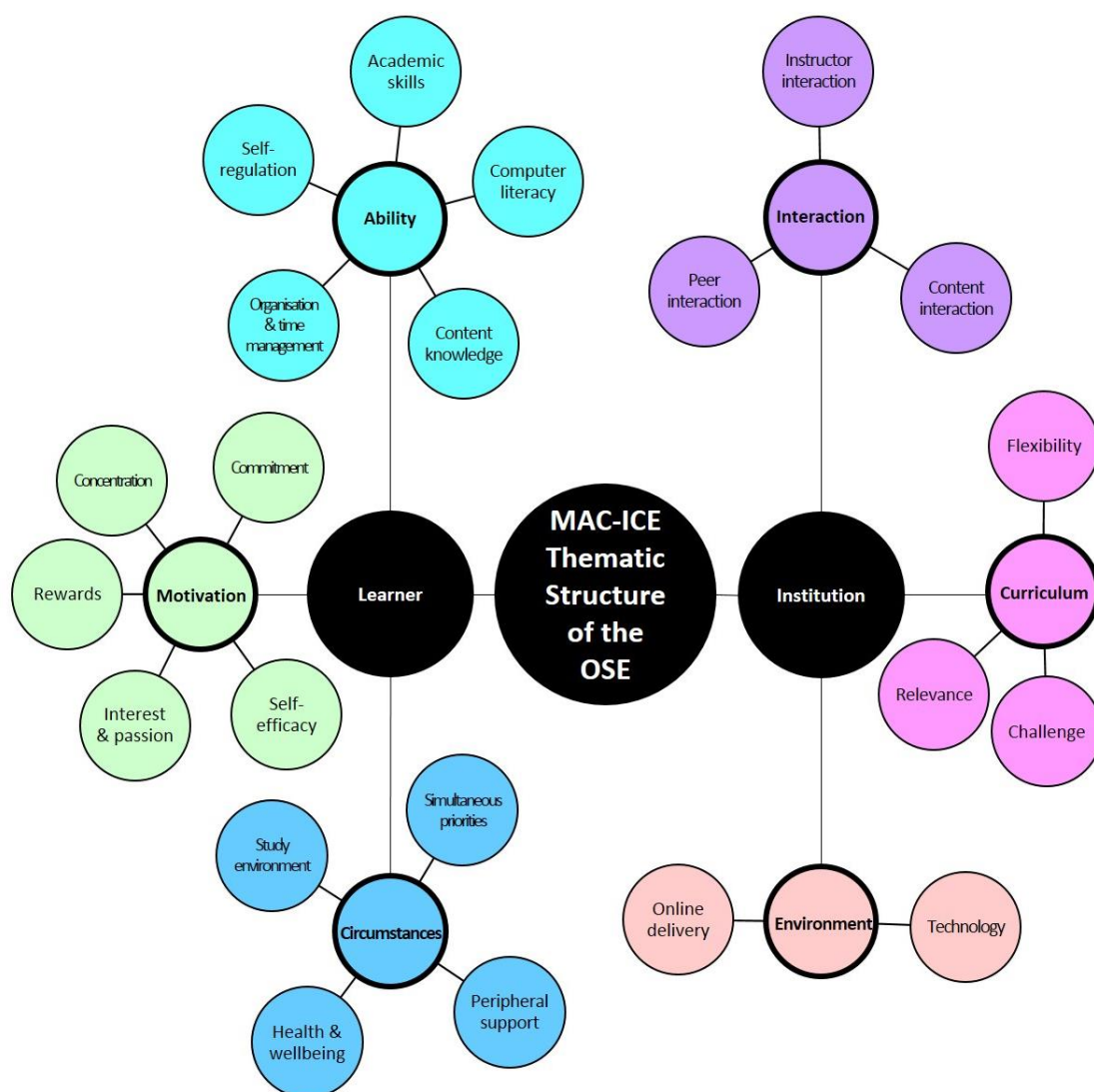


Figure 44. The MAC-ICE thematic structure of the OSE, incorporating learner *Motivation, Ability and Circumstances*, alongside institutional *Interaction, Curriculum and Environment*.

Each MAC-ICE theme comprised several sub-themes, representing particular experiences of OE. *Motivation* incorporated students' experiences of *concentration, commitment, self-efficacy, interest and passion, and rewards*. *Ability* incorporated students' *academic skills, computer literacy, prior content knowledge, organisation*

*and time management, and self-regulation. Circumstances* incorporated students' experiences of *simultaneous priorities, peripheral support, health and wellbeing, and physical study environment*. Institutional *Interaction* comprised students' experiences of *interaction* with their *instructors, peers* and *course content*. *Curriculum* incorporated experiences of *course flexibility, challenge* and *relevance*; and *Environment* incorporated students' experiences of *online delivery* and *technology*.

These MAC-ICE themes were also interconnected, with each experience contributing to other experiences. Each theme may be both influenced by, and subsequently inform, other themes. Specifically, the findings suggest learner *Motivation* and *Ability* may contribute to online students' experiences of institutional *Curriculum* and *Environment*, while institutional *Interaction, Curriculum* and *Environment* may contribute to learner *Motivation, Ability* and *Curriculum*. These connections highlight the complexity of the OSE, with experiences of the institution informing, and influenced by, experiences associated with the learner. No theme in isolation, or solely learner or institution themes were sufficient to explain the lived experience of OE. The OSE, therefore, may be highly complex, determined not purely by either the learner or institution, or by particular learner/institutional attributes, but by a complex interplay of intrinsic and extrinsic experiences, reflecting students' *Motivation, Ability* and *Circumstances*, alongside institutional *Interaction, Curriculum* and *Environment*.

**Research Question 2: *what are students' expectations of OE, and how do these expectations inform students' construction of, and attribution of meaning to their lived experiences of OE?***

The findings suggest students' expectations, prior to commencing and throughout their first year of study, may contribute to their lived experiences of OE. Students' may construct their lived experiences based on these expectations; and attribute meaning to subsequent experiences in the context of their expectations. In particular, students' expectations may inform their affective response to subsequent experiences, expressed through their satisfaction or disappointment with particular experiences.

Online students may hold relatively accurate expectations of OE, and accurately predict potential challenges. Some experiences, nonetheless, may fail to live up to students' expected standards; and/or the extent of anticipated challenges may be underestimated. In particular, online students may overestimate aspects of their own *Motivation, Ability* and *Circumstances*. Though confident upon commencing their online course, yet mindful of potential weaknesses, students may underestimate their capacity to meet course requirements, or the role they will play in their own success. Online students may misjudge the extent of new learning required, and underestimate reliance on self-regulation. They may miscalculate the time required for their studies, or their availability. Students may also underestimate their capacity to sustain a deep commitment to their studies, and to avoid procrastination or distractions. In addition, online students may not fully appreciate potential impacts of simultaneous priorities, or their capacity to manage these. They may overestimate reliability of peripheral support, underestimate impacts of illness or personal issues, and underestimate the importance of a good study environment. These inaccuracies suggest some students may lack a complex understanding of their own strengths/weaknesses; what is required to participate effectively in OE; how to prepare effectively to meet these requirements; and/or how to ensure they remain motivated and on-track, in the face of potential distractions.

Students' expectations of institutional experiences may be less accurate, with several aspects of *Interaction, Curriculum* and *Environment* failing to meet students' expectations. Inconsistent instruction and course design, in particular, may be associated with substantial frustration. The extent of guidance, feedback and support from some instructors may fail to meet online students' expectations, and students may underestimate challenges associated with compulsory peer interaction. Online students may also underestimate the amount of reading required, and overestimate course flexibility, creating delays and stress. In addition, a course may not meet students' desired level of challenge or career relevance. The quality of online delivery, when compared to presumed on-campus conditions, furthermore, may not reach students' expectations, and students may underestimate the extent or impact of technical difficulties. These discrepancies between online students' expectations and the experiences facilitated by their institution, suggest some students may commence

uncertain, or with insufficient understanding of what OE may entail; and/or there may be a lack of quality assurance strategies in place, which might have ensured consistently high standards of online instruction, curricula and delivery. As a result, online students may evaluate their OSE as being of poor quality, and question their return on investment.

Many of the above challenges were anticipated, yet students' awareness alone was insufficient to prevent these influencing subsequent experiences or outcomes. Accurate expectations, therefore, while important, may not be sufficient for a quality OSE. The diversity of expectations and experiences described by participants, all students of the same institution, furthermore, suggest impossibility in both establishing consistently accurate expectations, and ensuring experiences consistently meet students' expectations, under conditions described in the present research.

**Research Question 3: *how do students' lived experiences of OE inform the perceived quality of their OSE, with regard to their learning, academic performance, satisfaction and retention outcomes, during their first year of study?***

The findings suggest students' lived experiences of OE may inform the perceived quality of their OSE in complex ways. Each *MAC-ICE* theme may play an important role in OE quality, with each experience informing subsequent experiences and, directly or indirectly, contributing to first-year online student outcomes. Specifically, experiences of learner *Motivation* may contribute to students' learning, academic performance, satisfaction and retention. *Ability* may contribute to learning, academic performance and retention; and *Circumstances* may contribute to students' satisfaction and retention. Institutional *Interaction* may contribute to students' learning, academic performance and satisfaction; *Curriculum* may contribute to learning, academic performance, satisfaction and retention; and *Environment* may contribute to students' academic performance, satisfaction and retention. These online student outcomes may also be interconnected, with learning informing academic performance and satisfaction; academic performance informing student satisfaction and retention; and satisfaction informing student retention.



Experiences associated with both the learner and the institution, and all subsequent outcomes, therefore, may each play a role in facilitating a quality OSE.

### **Conceptualising a quality Online Student Experience**

Bringing together the above findings, a complex understanding of the OSE emerges. The findings suggest that confirmation/disconfirmation of expectations may influence students' initial experiences of OE, which in turn influence subsequent experiences; and ultimately contribute to online students' outcomes. The *MAC-ICE* thematic matrix, shown in Table 6 on page 255, summarises the perceived connections between each *MAC-ICE* theme, between each theme and online student outcome, and between online student outcomes; presenting a complex matrix of experiences that may combine to facilitate a quality OSE. This thematic matrix demonstrates the interconnectedness of the *MAC-ICE* themes and online student outcomes. *Motivation* is shown to contribute to other aspects of *Motivation*, as well as *Ability* and *Curriculum*; and directly contributes to online students' learning, academic performance, satisfaction and retention. *Ability* contributes to all *MAC-ICE* themes; as well as students' learning, academic performance and retention. *Circumstances* contribute to *Motivation*, *Ability* and *Circumstances*; as well as student satisfaction and retention. Institutional *Interaction* is shown to contribute to all *MAC-ICE* themes; as well as students' learning, academic performance and satisfaction. *Curriculum* contributes to *Motivation*, *Ability* and *Circumstances*; as well as students' learning, academic performance, satisfaction and retention. *Environment* contributes to all *MAC-ICE* themes; as well as students' academic performance, satisfaction and retention. Finally, the outcome of learning is shown to contribute to students' academic performance and satisfaction; academic performance contributes to satisfaction and retention; and students' satisfaction contributes to their retention.

The connections between *MAC-ICE* themes, and between online student outcomes, demonstrate the complexity of the OSE. To look at any one theme or outcome in isolation would be to overlook important contributions to, and influences of, corresponding experiences. A holistic conceptualisation of the OSE, therefore, is

essential to understanding what may influence OE quality, and how this may be enhanced.

Together, the answers to the present research questions describe how first year university students construct their lived experiences of OE, and attribute meaning to these experiences. Clear connections between online students' expectations, experiences and outcomes have been identified; with students' lived experiences influenced by their expectations of OE, and playing an important role in the perceived quality of their OSE. The next section presents the interpretation of these findings in light of previous research and theory, demonstrating the unique contribution to knowledge offered by the present research.

### **Implications for theory**

Students' lived experiences of OE, and the role of identified *MAC-ICE* themes described in the present research, extend and clarify OE theory. In principle, the findings support application of CLT and ECT to OE, while demonstrating notable consistencies with Kember's Longitudinal-process Model of Drop-out from Distance Education (1989). The findings extend these theories, however, clarifying the sociocultural context applicable to learning; suggesting additional influences on academic performance, beyond learning outcomes; proposing opportunities to circumvent impacts of disconfirmed expectations; and identifying further complexity in online student attrition. These theoretical implications are discussed below in reference to online students' learning, academic performance, satisfaction and retention, associated with perceptions of a quality OSE.

#### **Online students' learning and academic performance**

The present research identified learner *Motivation* and *Ability*; as well as institutional *Interaction* and *Curriculum*, as having directly contributed to online students' learning. In addition, all *MAC-ICE* themes were perceived to contribute *indirectly* to students' learning, facilitating experiences conducive to knowledge construction. Students' academic performance was perceived to be influenced by these learning outcomes, in addition to learner *Motivation* and *Ability*; and

institutional *Interaction, Curriculum and Environment*; and again indirectly influenced by all *MAC-ICE* themes. These different *MAC-ICE* thematic profiles of learning and performance outcomes demonstrate some conceptual differences between these constructs, with learning outcomes important, yet not the sole determinant of academic performance. Consistent with this distinction, the following section focuses first on the lived experiences contributing to learning, before exploring how these, combined with other experiences, may contribute to online students' academic performance.

### ***Contributions to online students' learning***

The present research suggests students' *concentration (Motivation)* and prior *content knowledge (Ability)* may enhance their capacity to acquire new knowledge. Meaningful *Interaction with course content and peers*, with a manageable *challenge* and clearly *relevant Curriculum*, may encourage and support students to learn. In addition, students' *commitment, interest, rewards, academic skills, computer literacy, content knowledge, organisation, self-regulation, simultaneous priorities, peripheral support, health, and study environment*; together with *instructor, content and peer interaction, flexibility*; and *online delivery*, may indirectly contribute to a quality OSE, facilitating conditions conducive to students' learning. These findings clearly demonstrate online courses can facilitate effective learning (Parsons-Pollard et al., 2008; Siebert et al., 2006; Twigg, 2003), under particular conditions.

The findings extend prior evidence for discrete connections between learning and some of the above sub-themes. In particular, the present research reinforces the importance of students' concentration (Debozy, 2009; Xie & Huang, 2014), content knowledge (Terry et al., 2016; Wang, 2009; Xu & Jaggars, 2011), content interaction (Huang et al., 2011; Stone, 2017; Tomas et al., 2015), peer interaction (Huang et al., 2011; Oh & Kim, 2016; Paechter et al., 2010; Parsons-Pollard et al., 2008), challenge (Ali et al., 2004; Almala, 2005), and relevance (Huang et al., 2011; Tomas et al., 2015), for online students' learning; adding the student perspective. Participants' experiences, however, demonstrate that each of these factors alone may not facilitate learning.

In addition, the present research introduces new evidence for the perceived *indirect* contribution of several factors to online students' learning. The findings identified indirect roles for students' commitment, interest, rewards, academic skills, computer literacy, organisation, self-regulation, simultaneous priorities, peripheral support, health, and study environment; alongside instructor interaction, flexibility, and online delivery; in facilitating experiences conducive to online students' learning. These factors may be important for online students' learning, yet may be masked by their influence on direct contributions to learning.

The present research did not support prior suggestions of connections between online students' learning and several learner and institutional factors, which were not perceived to have contributed to participants' learning. Specifically, the findings did not support connections between online students' learning and commitment (Seijts & Latham, 2011; Xie & Huang, 2014); self-efficacy (Xie & Huang, 2014); self-regulation (Paechter et al., 2010; Richardson & Newby, 2006); instructor interaction (Ali et al., 2004; Paechter et al., 2010); online delivery (Osborne et al., 2009); or technology (Lo et al., 2011). These factors may instead reflect students' decisions/motivations to apply for their course; contribute to online students' experiences of concentration, peer interaction, and/or challenge, *indirectly* contributing to their learning; or may influence academic performance, rather than learning.

The present research demonstrates the range of expectations and experiences, which may combine to facilitate online students' learning. The findings clarify and bring together discrete evidence of learning factors, while introducing the student perspective and revealing potential indirect contributions to online students' learning. Perceived learning in OE may be strengthened by students' capacity to concentrate, prior content knowledge, meaningful content and peer interaction, a moderately challenging curriculum, and clearly relevant learning activities. In addition, students' commitment, interest, experience of rewards, academic skills, computer literacy, organisation, self-regulation, management of simultaneous priorities, peripheral support, health, and study environment; alongside instructor interaction, flexibility, and online delivery conditions equivalent to on-campus conditions, may contribute to these experiences, indirectly enhancing online

students' learning. Together, these findings demonstrate notable consistencies with CLT.

### ***Constructivist Learning Theory***

CLT posits that learning requires active, learner-centred knowledge construction (Lesgold, 2004; Richardson, 2003). Meaning is constructed on a foundation of previous knowledge, and influenced by the learner's sociocultural context and experiences (Merriam & Bierema, 2014; Phye, 1997). Constructivist learning involves the application of knowledge in meaningful ways; with learning situation-specific, socially mediated and reliant on authentic learning experiences (Merriam & Bierema, 2014; Oliver, 2000). Furthermore, Constructivist learning necessitates access to collaborative, challenging and supportive learning environments (Oliver & Herrington, 2002; Wilson & Lowry, 2000).

The present research findings are largely consistent with CLT. Learning was influenced by students' *Motivation (concentration)* and *Ability (prior content knowledge)*; and experiences of institutional *Interaction (with content and peers)* and *Curriculum (challenge and relevance)*. These themes closely resemble CLT (Merriam & Bierema, 2014). Most notably, the findings provide strong support for the role of peer collaboration and support (the social context) in students' construction of knowledge (Oliver & Herrington, 2002; Wilson & Lowry, 2000). Participants' experiences demonstrate online students may construct knowledge through a process of collaborative social negotiation and reflection (Almala, 2005; Wang, 2009; Yager, 2000). The importance of concentration and perceived challenge also supports the active role of the learner in the construction of knowledge (Oliver, 2000). Students did not learn merely as a result of behavioural reinforcement or cognitive rules; they needed to think in abstract ways and apply their learning to unfamiliar scenarios. In addition, students' knowledge was constructed upon a foundation of prior content knowledge, with subsequent learning dependent on the extent of students' existing skills and experience (Lesgold, 2004; Wang, 2009). The importance of dynamic and meaningful content, and the application of knowledge to relevant activities, furthermore, supports the role of authentic learning experiences, in line with CLT (Almala, 2005; Lesgold, 2004).

Together, these findings support application of CLT to OE, and demonstrate the particular importance of students' own motivation and ability; as well as institutional interaction and curriculum, in facilitating online students' learning.

Learner *Circumstances* and the institutional *Environment* could also be viewed as relevant to the sociocultural context of Constructivist learning (Merriam & Bierema, 2014), yet did not directly inform learning in the present research. Instead, learner circumstances may contribute to subsequent experiences of learner *Ability*, institutional *Interaction* and *Curriculum*; indirectly facilitating students' learning. Similarly, the institutional environment may inform subsequent experiences of learner *Ability* and institutional *Interaction*, contributing indirectly to learning. While these experiences may be important to the OSE, learner circumstances and the institutional learning environment may not play a direct role in facilitating students' learning. The sociocultural context necessary for Constructivist learning, therefore, may rest primarily on social interaction associated with an online course, and not directly influenced by students' circumstances outside of their course, or by their learning environment. Consequently, Constructivist learning, in the context of OE, may be primarily dependent on learner motivation and ability in conjunction with institutional interaction, with learner circumstances and the environment likely to play a secondary role in facilitating such experiences. The institutional sociocultural context, nonetheless, appeared limited for many students in the present research.

### ***Contributions to online students' academic performance***

The present research suggests where Constructivist learning has occurred, academic performance may also be enhanced. Having learned deeply, online students may apply their knowledge effectively in assessment, and perform well as a result. This connection between learning and academic performance reinforces the importance of authentic assessment in Constructivist learning (Merriam & Bierema, 2014).

Prior research supports and has relied upon this connection between learning and performance outcomes. Students' development of learning skills has been shown to contribute to stronger online student performance. Rosser (2015), for instance, found completion of a foundational five-week Psychology of Learning course,

increased online students' subsequent performance. In addition, much of the OE literature discusses learning and performance outcomes interchangeably (e.g., Paechter et al., 2010; Seijts & Latham, 2011; Terry et al., 2016); suggesting learning is a necessary condition for strong academic performance, and strong academic performance provides evidence of learning. Participants' experiences support this assertion that learning and performance outcomes are connected.

In addition to effective learning, the present research identified students' *concentration (Motivation)*; *academic skills and time management (Ability)*; *instructor Interaction*; *challenge (Curriculum)*, and *online delivery (Environment)*, to contribute to academic performance. Students' *concentration, commitment, interest and passion, academic skills, computer literacy, content knowledge, organisation and time management, self-regulation, simultaneous priorities, peripheral support, health and wellbeing and study environment*; as well as *instructor/content/peer interaction, flexibility, challenge, online delivery and technology*, furthermore, may contribute indirectly to students' academic performance, facilitating experiences that support students to achieve strong results. These findings demonstrate online courses can result in strong academic performance (Cavanaugh & Jacquemin, 2015; DiRienzo & Lilly, 2014; Parsons-Pollard et al., 2008), where certain conditions are experienced.

The present research reinforces previously suggested connections between online academic performance and concentration (Waschull, 2005); academic skills (Cavanaugh & Jacquemin, 2015; Hachey et al., 2012); organisation (Mason et al., 2015; Waschull, 2005); instructor interaction (Elliott & Adams, 2011; Paechter et al., 2010; Stone, 2017); peer interaction (Nagel, 2009; Paulus & Roberts, 2006; Stone, 2017); and online delivery (Australian Government, 2017a; Sansone et al., 2012; Waschull, 2001); introducing the student perspective. In addition, the findings propose connections between online performance and several factors, not previously identified in the OE literature. New evidence is offered for a perceived connection between academic performance and a challenging and flexible curriculum, beyond the curriculum's contribution to learning outcomes. The findings also propose indirect roles for students' commitment, interest and passion, academic skills, computer literacy, content knowledge, self-regulation, simultaneous priorities,

peripheral support, health and wellbeing, and study environment, alongside content interaction, flexibility, challenge, and technology, in facilitating experiences conducive to online students' performance. These factors may be important for online students' academic performance, yet may be disguised by their influence on direct contributions to learning or performance.

The present research did not support prior suggestions of connections between online students' performance and several learner and institutional factors. Specifically, the findings did not support direct contributions of prior content knowledge (Xu & Jaggars, 2011), content interaction (Dowel & Small, 2011), or technology (Dowel & Small, 2011; Grabe & Christopherson, 2008; Sansone et al., 2012), to online students' academic performance. These experiences may instead contribute to experiences of concentration, organisation, challenge, flexibility, online delivery, or to online students' learning; *indirectly* contributing to academic performance.

One must also consider the role of instructor experience and expertise in instructor interaction (Herrington et al., 2005; Paechter et al., 2010). Perhaps, for instance, units with less experienced instructors may have facilitated less effective interaction, while those lead by seasoned online instructors may have exceeded students' expectations. It is acknowledged the present research focused on the online *student* experience, and further research is, therefore, necessary to uncover *instructors'* perspectives. In particular, it would be helpful to understand why some online instructors may not adhere to university instructional standards, as there may be practical barriers to doing so, including time, institutional expectations, workload, training and support (McAllister, 2009; Moody, 2004; Stone, 2017). Given the variety of experiences, and perceived inconsistencies in instruction, furthermore, an objective measure of instructor participation could be helpful in distinguishing good practice from the diversity of student needs and expectations.

The present research looks beyond understanding of learning, demonstrating the range of experiences that may combine to facilitate strong academic performance in OE. The findings clarify and bring together discrete evidence for known contributions to performance, while introducing the student perspective, and



revealing additional direct and indirect contributions to online students' academic performance. Students' concentration, academic skills and organisation; alongside meaningful instructor and peer interaction, a moderate challenge, flexibility, and online delivery conditions commensurate with on-campus experiences, may strengthen online students' academic performance. In addition, students' commitment, interest and passion, computer literacy, content knowledge, self-regulation, simultaneous priorities, peripheral support, health and wellbeing and study environment, as well as content interaction and technology, may contribute to these experiences, indirectly enhancing online students' performance. Further research would be valuable, nonetheless, in investigating ways students may be able to make up for lost time, and how to minimise snowballing time management issues during the semester.

These findings suggest online academic performance is not merely a measure of students' learning. Strong grades may also rely on students' capacity to dedicate requisite skills and time to their assessment; in addition to clear guidance from instructors, commensurate peer input, flexibility to manage assessment alongside other important commitments, and marking criteria appropriate to online delivery conditions. Studies which have examined online students' learning through academic results (e.g., Cavanaugh & Jacquemin, 2015; Parsons-Pollard et al., 2008), therefore, may have inadvertently overlooked alternative influences, such as academic skills, organisation, instructor interaction, flexibility, and/or online delivery. Indications of poor academic performance in OE, furthermore, may not necessarily reflect insufficient learning (Paechter et al., 2010), or student capability (Griffin et al., 2013; Waschull, 2005). The institution itself may also play an important role in facilitating conditions that enable and empower online students to succeed.

### **Online student satisfaction**

Complementing students' learning and academic performance, student satisfaction is an important online student outcome. It is this broader appraisal of students' experiences that facilitates a wholesome understanding of the OSE, and which articulates the quality and value of OE ascribed by its primary stakeholders. The present research identified learner *Motivation* and *Circumstances*; as well as

institutional *Interaction, Curriculum and Environment*; and online student learning and performance outcomes, as having directly contributed to students' satisfaction. The following section discusses the implications of these findings in light of prior research, and with regard to ECT.

### ***Contributions to online student satisfaction***

The present research suggests students' *concentration, commitment, self-efficacy, interest and passion and rewards (Motivation); health and wellbeing (Circumstances); instructor/content/peer Interaction; perceived challenge and relevance (Curriculum); and online delivery (Environment)*, may influence their enjoyment, pride and perceived worthiness of their online course. Learning and academic performance outcomes may also contribute to online students' satisfaction. In addition, *concentration, commitment, interest and passion, rewards, academic skills, computer literacy, content knowledge, organisation and time management, self-regulation, simultaneous priorities, peripheral support, health and wellbeing, study environment, instructor/content/peer interaction, flexibility, challenge, relevance, online delivery, and technology*, may indirectly contribute to students' satisfaction, facilitating enjoyable and valued experiences. These findings demonstrate it is possible for OE to offer a satisfying experience (Antonis et al., 2011; Huang et al., 2011; Twigg, 2003), where particular needs are met.

Online student satisfaction is clearly a multifaceted construct, dependent on a complex combination of learner and institutional experiences. The findings extend prior evidence for discrete connections between online student satisfaction and some of the above sub-themes, demonstrating consistencies from the student perspective. In particular, the findings reinforce previously suggested connections between online students' satisfaction and concentration (Dziuban et al., 2015), commitment (Chen et al., 2017; Chiu et al., 2007; Dziuban et al., 2015), self-efficacy (Palmer & Holt, 2009; Shen et al., 2013), interest and passion (Chiu et al., 2007; Nonis & Fenner, 2011; Sinclair, 2011), rewards (Dziuban et al., 2015), instructor interaction (Dziuban et al., 2015; Ilgaz & Gulbahar, 2015; Paechter et al., 2010), content interaction (Dziuban et al., 2015; Ilgaz & Gulbahar, 2015; Kramer & Bohrs, 2016; Kuo et al., 2013), peer interaction (Lo et al., 2011; Sinclair, 2011), challenge

(Sinclair, 2011), relevance (Calli et al., 2013; Lee, 2010; Sinclair, 2011), and online delivery (Alexander et al., 2003; Lo et al., 2011; Parsons-Pollard et al., 2008). In addition, prior research supports the assertion that achievement of learning (Lo et al., 2011), as well as academic performance outcomes (Cherry et al., 2003; Chiu et al., 2007; Dziuban et al., 2015), may contribute to online student satisfaction.

The present research also provides some support for reports of online courses having lower student satisfaction (Palmer & Holt, 2009; Parsons-Pollard et al., 2008; Waschull, 2001), with *online delivery* directly informing participants' satisfaction. The findings offer clarification as to the inconsistencies in such reports, however; suggesting characteristics of online delivery may contribute to potential dissatisfaction, while the opportunity provided by online delivery may also facilitate student satisfaction (Nonis & Fenner, 2011; Stone et al., 2016; Waschull, 2001). The present research, nonetheless, suggests a more complex driver of student satisfaction, than explained by any of these known contributions alone.

The findings also propose several new connections between online student satisfaction and specific learner and institutional experiences. In particular, the findings propose roles for students' health and wellbeing, and content interaction, not previously identified in the OE literature. New evidence is also offered for the indirect contribution of academic skills, computer literacy, content knowledge, organisation and time management, self-regulation, simultaneous priorities, peripheral support, study environment, flexibility, and technology, in facilitating experiences conducive to online student satisfaction. These factors may be important for online students' satisfaction, yet may be disguised by their influence on direct contributions to satisfaction.

In addition, the present research did not support prior suggestions of connections between satisfaction and several learner and institutional factors. Specifically, online students' computer literacy (Parsons-Pollard et al., 2008; Wu et al., 2006), *on-campus* students' simultaneous priorities (Moro-Egido & Panades, 2010), *on-campus* curriculum flexibility (Moro-Egido & Panades, 2010), and technology in online courses (Ilgaz & Gulbahar, 2015; Palmer & Holt, 2009) were not perceived to contribute to students' satisfaction in the present research. These

sub-themes may instead contribute to online students' experience of concentration, wellbeing, organisation and time management, health and wellbeing, online delivery, and/or academic performance outcomes, indirectly contributing to their satisfaction; or suggested on-campus relationships may not extend to OE.

The present research demonstrates the breadth of factors that may contribute to online student satisfaction; while offering new evidence of potential connections between online students' motivation and circumstances, and their satisfaction; and clarifying the role of online delivery in facilitating online student satisfaction. The findings clarify and bring together discrete evidence of satisfaction factors, while introducing the student perspective, and revealing additional contributions to online students' satisfaction. Students' commitment, concentration, self-efficacy, interest and passion, experience of rewards, and wellbeing; alongside meaningful interaction with instructors, course content and peers; a challenging and relevant curriculum; and online delivery conditions commensurate with on-campus conditions; as well as strong learning and performance outcomes, may help to increase online students' satisfaction. In addition, students' academic skills, computer literacy, content knowledge, organisation and time management, self-regulation, simultaneous priorities, peripheral support, and study environment; plus institutional flexibility and reliable technology, may contribute to these experiences; indirectly enhancing online students' satisfaction. Further research, which investigates online students' goal setting and course-selection behaviours would be valuable, nonetheless, in facilitating a deeper understanding of how online students' commitment might be established, strengthened, and/or reinforced.

### ***Expectation-Confirmation Theory***

In addition to the aforementioned *MAC-ICE* themes, and online student outcomes, the present research suggests online student expectations may play an important role in student satisfaction, consistent with ECT. ECT posits that consumers are more likely to be satisfied, consider outcomes fair, and repurchase a product/service, where it is perceived to have met their expectations (Wu et al., 2006). Disconfirmation of consumer expectations informs the degree of satisfaction, with positive disconfirmation (exceeding expectations) facilitating higher levels of

satisfaction, and negative disconfirmation (failing to meet expectations), resulting in dissatisfaction (Bhattacharjee, 2001; Lee, 2010). Consumer expectations are revised or clarified following their initial experiences of the product/service, forming post-usage expectations, which further inform their satisfaction (Bhattacharjee, 2001; Lee, 2010). Consumer satisfaction then predicts intentions to continue usage, and to repurchase a product/service (Bhattacharjee, 2001; Lee, 2010). In the context of OE, ECT suggests alignment of online students' expectations and subsequent experiences, in addition to their post-entry expectations, may inform their satisfaction, and subsequent retention (Buckley et al., 2004; Chiu et al., 2005). Where students' expectations of their OSE are experienced as inaccurate, therefore, their satisfaction, evaluation of perceived outcomes, and decisions to persist would be affected.

Accurate expectations commonly accompanied positive experiences in the present research, supporting the assertion that expectation confirmation may result in enhanced student satisfaction (Bhattacharjee, 2001; Lee, 2010; Wu et al., 2006). Similarly, negative expectation disconfirmation accompanied student dissatisfaction. Where students' expectations were met, and they found their experience useful (relevant), students described this having facilitated their satisfaction. Where expectations were exceeded (positive disconfirmation), furthermore, student satisfaction was further increased. In contrast, unmet expectations (negative disconfirmation) were explicitly described to have influenced students' dissatisfaction. These findings are consistent with ECT.

Extending ECT, however, the findings suggest the relationship between negative expectation disconfirmation and dissatisfaction is not necessarily definitive. Where instructor guidance and peripheral support assisted participants to adjust their expectations, and/or adapt their practices to compensate for unexpected challenges, student satisfaction was preserved, and in some cases enhanced. Overcoming challenges was itself seen as a substantial driver of students' satisfaction. Where students are able to overcome challenges resulting from negative expectation disconfirmation, therefore, it may be possible to preserve, or even enhance, their satisfaction. Adding these elements of instructor and peripheral support to ECT suggests active expectation management and associated support may help to clarify

the role of expectations in online student satisfaction further, as illustrated in Figure 45. The diversity in participants' experiences, nevertheless, complicated expectation clarification, with post-usage expectations difficult to adjust where experiences varied considerably.

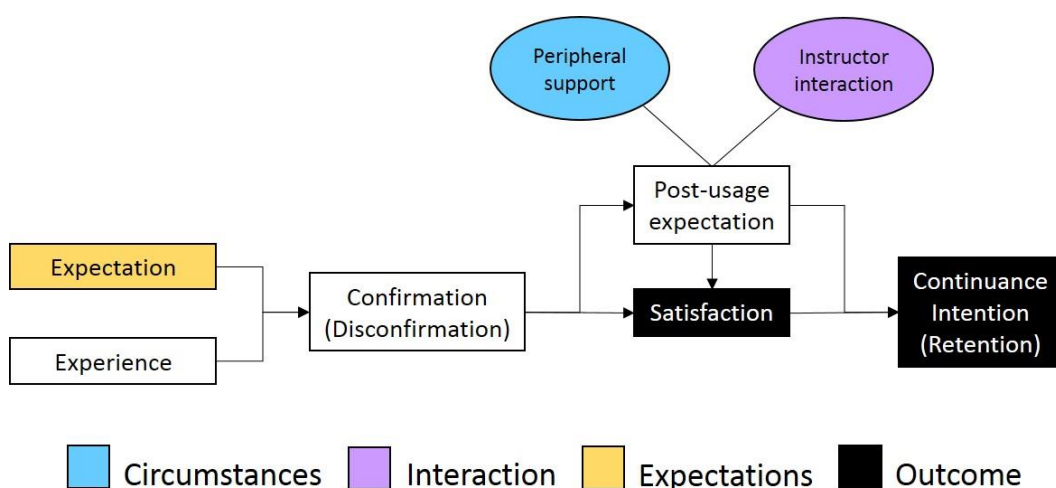


Figure 45. ECT applied to OE, incorporating expectation management through *peripheral support* and *instructor interaction*; based on the Expectation-Confirmation Model developed by Bhattacharjee (2001).

The present research provides strong support for the application of ECT to OE, demonstrating a critical connection between students' expectations and the perceived quality of their OSE. Where online students' expectations are met, or exceeded, students may express satisfaction with their OSE. Satisfied students may then evaluate their course as useful, and, feel inspired to persist with their studies. Experiences and outcomes that fail to meet students' expectations, on the other hand, may disappoint and dissatisfy students, prompting them to question the value of their course. With experience and support, nonetheless, students may adjust their (post-usage) expectations, setting a new baseline to which subsequent experiences and outcomes are compared (Bhattacharjee, 2001; Lee, 2010). These revised expectations may then prompt subsequent cost-benefit analyses, informing students' satisfaction and decisions to continue (Kember, 1989). Diverse experiences, nevertheless, may complicate students' post-usage expectations. Meeting or clarifying student expectations may also require some consistency in OE design and delivery. In essence, the confirmation of expectations, facilitated by consistent

(quality-assured) standards and active expectation management, may enhance online student satisfaction.

The present research suggests online student satisfaction may be facilitated where students' expectations are actively addressed; in addition to strategies that consider online students' motivation and broader circumstances, offer meaningful interaction, provide a strong curriculum, and facilitate a high quality learning environment. While ECT offers a helpful framework through which to examine the OSE, it fails to take into account these learner and institutional characteristics. A more comprehensive theory, which considers students' motivation, ability and circumstances, and experiences of institutional interaction, curriculum and their online learning environment; alongside the (dis)confirmation and management of student expectations, therefore, is needed to more effectively explain online student satisfaction.

### **Online student retention**

As a critical measure of a quality OSE, retention is also an important online student outcome. The present research identified learner *Motivation, Ability* and *Circumstances*; as well as institutional *Curriculum* and *Environment*; and academic performance and satisfaction outcomes, as having directly contributed to online students' retention. The following section discusses the implications of these findings in light of prior research, and with regard to Kember's Longitudinal-process Model of Drop-out from Distance Education (1989).

### ***Contributions to online student retention***

The present research suggests students' *commitment (Motivation)*; *academic skills* and *organisation and time management (Ability)*; and competing (*simultaneous*) *priorities* and poor *health and wellbeing (Circumstances)*, may influence their capacity and desire to persist. Course *inflexibility* and unclear *relevance (Curriculum)*, as well as poor *online delivery* conditions (*Environment*), may also lead students to consider withdrawing from their course/unit. In addition, academic performance and satisfaction outcomes may contribute to students' decisions to persist. Students' *Motivation, Ability* and *Circumstances*, as well as

institutional *Interaction*, *Curriculum* and *Environment*, and all corresponding sub-themes, furthermore, may indirectly contribute to students' retention, facilitating experiences that encourage/enable or discourage/prevent them from persisting.

As with other online student outcomes, retention is clearly a complex construct, informed by the interplay of several learner and institutional themes. The findings again extend discrete evidence of connections between student retention and some of the above sub-themes, demonstrating consistencies from the student perspective. In particular, prior research supports identified connections between online student retention and organisation and time management (Kim & Frick, 2011; Packham et al., 2004), simultaneous priorities (Hyllegard et al., 2008; Moore & Greenland, 2017; Packham et al., 2004), health and wellbeing (Hyllegard et al., 2008), relevance (Chang et al., 2015; Chiu et al., 2007; Lee, 2010; Park & Choi, 2009), and online delivery (Australian Government, 2017a; Hyllegard et al., 2008; Xu & Jaggars, 2011). Participants' experiences also affirm the notion students' satisfaction may contribute to retention (Calli et al., 2013; Chiu et al., 2007; Lee & Choi, 2013; Park & Choi, 2009), as well as reports of low grades contributing to student attrition (Cochran et al., 2014; Willging & Johnson, 2009). In addition, the findings extend suggested connections between student retention and commitment in *on-campus* (Lau, 2003), *distance* (Kember, 1989), and *self-directed* online courses (Chang et al., 2015; Kim & Frick, 2011); as well as flexibility in online *self-directed* courses (Chang et al., 2015; Kramer & Bohrs, 2016); suggesting these connections may also apply for online HE. The findings also propose new connections between online student retention and several learner and institutional experiences. New evidence is offered for the indirect roles of concentration, self-efficacy, interest and passion, rewards, academic skills, computer literacy, content knowledge, self-regulation, peripheral support, study environment, instructor/content/peer interaction, challenge, and technology, in facilitating experiences conducive to online students' retention.

The present research also did not support prior suggestions of connections between retention and several learner and institutional factors. Specifically, connections between retention and: self-efficacy and rewards in online *professional development* courses (Chang et al., 2015); online students' academic skills (Cochran



et al., 2014; Hachey et al., 2012; Kember, 1989), computer literacy (Hyllegard et al., 2008; Packham et al., 2004; Wu et al., 2006), and peripheral support (Cochran et al., 2014; Packham et al., 2004; Stone, 2017); online instructor interaction (Gleason, 2004; Nagel, 2009; Stone, 2017); *on-campus* content interaction (Lau, 2003); online peer interaction (Gleason, 2004; Nagel, 2009); and technology in online courses (Chang et al., 2015; Gleason, 2004; Packham et al., 2004), did not contribute to students' decisions to withdraw in the present research. These factors may instead reflect students' decisions to attempt HE; contribute to other experiences or outcomes that subsequently influence student retention; or may not apply to online HE.

The findings clarify prior understanding of online student retention, demonstrating the complexity of experiences that may contribute to students' decisions to persist, or otherwise. Though not explicitly examined, the prevalence of student attrition within the participant sample supports assertions of low student retention in OE, while clarifying the specific experiences associated with OE that may contribute to attrition. The present research, consequently, brings together a range of prior studies, introducing the student perspective and demonstrating the breadth of factors that may combine to facilitate online student retention, beyond online delivery itself. Online students' commitment, organisation, and management of their simultaneous priorities and wellbeing; and experiences of a flexible and clearly relevant curriculum, with online delivery conditions commensurate with on-campus; as well as strong performance and satisfaction outcomes, may enable and empower students to persist in OE. In addition, all *MAC-ICE* sub-themes may help facilitate these conditions, indirectly contributing to online students' retention. Taken together, these findings demonstrate notable consistencies with ECT and Kember's Longitudinal-process Model of Drop-out from Distance Education (1989).

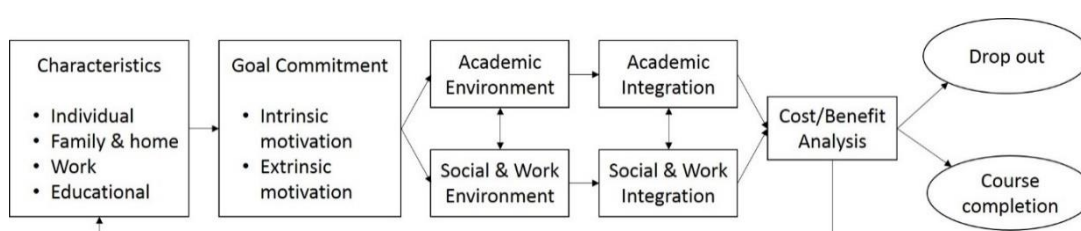
### ***Expectation-Confirmation Theory***

The above findings again provide strong support for the role of expectations in online student outcomes, and the application of ECT to the OSE. Low satisfaction was described to have influenced student attrition, supporting the ECT premise that satisfaction contributes to continuance intentions (Bhattacharjee, 2001; Lee, 2010;

Wu et al., 2006). Online student retention, therefore, may be indirectly enhanced by actively managing/considering students' expectations, while concurrently addressing students' motivation, ability and circumstances, and facilitating appropriate interaction, curricula and learning environments.

### ***Kember's Longitudinal-process Model of Drop-out from Distance Education (1989)***

As the most comprehensive retention theory applicable to OE, Kember's Longitudinal-process Model of Drop-out from Distance Education (1989) proposes student characteristics, goal commitment, academic integration, work/family/academic/social life integration, academic ability, and social/work circumstances all feed into students' cost/benefit analysis for persistence. Kember specifically broadened Tinto's (1975) 'student characteristics' to reflect the unique context and characteristics of distance learners, incorporating students' situation and family life, employment and non-school education. Kember also formulated retention as an ongoing decision cycle, with students' commitment considered only once in each cycle. In essence, Kember proposed that students' broader characteristics inform their goal commitment, which subsequently informs their academic, social and work environments; influencing their academic, social and work integration, as illustrated again in Figure 46. Students' academic, social and work integration then feeds into students' cost/benefit analysis, informing decisions to withdraw, or continue/complete their course.



**Figure 46.** Kember's Longitudinal-process Model of Drop-out from Distance Education (1989, Figure 3).

Applied to the present research, Kember's (1989) model suggests students' *Circumstances* and *Ability* would inform their *commitment (Motivation)*; which would in turn inform students' experiences and integration with course-related

*Interaction, Curriculum and Environment*; alongside the experience of *simultaneous priorities (Circumstances)* and academic performance outcomes. Students' *commitment* to their course would also be influenced by their *interest* in associated content, and the experience of *rewards (Motivation)*, alongside student characteristics (*Circumstances* and *Ability*).

In line with these propositions, students' *Circumstances (simultaneous priorities and health)*, and *Ability (organisation)* were perceived to play an important role in their retention, reflecting Kember's (1989) broadened notion of student 'characteristics'. Students' *commitment* to their course was also influenced by their *interest (Motivation)* and *peripheral support (Circumstances)*, consistent with Kember's model. In addition, student retention was influenced by the experience of *simultaneous priorities (Circumstances)*, a *flexible and relevant Curriculum, online delivery (Environment)*, and academic performance outcomes, supporting the role of Kember's social/work and academic environments in student retention. The significance of *simultaneous priorities*, furthermore, reinforces the importance of academic/social/work life integration, proposed by Kember. Together these sub-themes and outcomes align well to elements of Kember's Longitudinal-process Model of Drop-out from Distance Education, and support the importance of learner *Motivation, Ability and Circumstances*; institutional *Curriculum and Environment*; and academic performance, in online student retention.

The present research, however, suggests a more complex decision-making process, than proposed by Kember's (1989) model alone. Goal *commitment* was found to be influenced by aspects of students' characteristics and intrinsic *Motivation*, namely *peripheral support* and *interest*; however, *instructor Interaction* and *Curriculum* also contributed to students' *commitment*. *Simultaneous priorities* also did not appear to contribute directly to students' *commitment*, as Kember suggests. In addition, institutional *Interaction* was not reported to contribute directly to participants' retention, as implied by Kember's conceptualisation of the academic environment. Student satisfaction, furthermore, is absent in Kember's model, yet contributed to retention in the present research. The full process through which online students may decide to withdraw, or persist, therefore, may be insufficiently explained by Kember's model.

It is acknowledged, nonetheless, that Kember's (1989) model was originally developed to explain attrition in distance, rather than OE. It is feasible, therefore, that the above inconsistencies may relate to the unique conditions associated with OE. Distance education in 1989, for instance, likely differed from today's OE in terms of how students interacted with instructors, content and other students (Moore et al., 2011). Such underlying differences could explain some observed inconsistencies between Kember's model and the present research.

With Kember's Longitudinal-process Model of Drop-out from Distance Education (1989) insufficient to explain the full lived experience of students in the present research, a new and more comprehensive theory is needed to describe the way in which online students may decide to withdraw, and how online student retention may be enhanced. Specifically, a model is needed that takes account of online students' commitment, organisation, simultaneous priorities and health; curriculum flexibility and relevance, and online delivery conditions; as well as students' academic performance and satisfaction outcomes. A retention model that is longitudinal, reflecting a continuous decision-making cycle, nonetheless, appears to align well to online student retention. Experiences described herein, furthermore, offer strong support for the roles of commitment, student characteristics (ability and circumstances) and the academic environment (curriculum and learning environment) in facilitating student retention, consistent with Kember's model.

### **Theoretical conceptualisation of the Online Student Experience**

The range of experiences and outcomes perceived to have contributed to the OSE in the present research clarifies and extends OE theory. Broad conceptualisation of the OSE, incorporating both institutional and learner factors, supports Benckendorff et al.'s (2009) total Student Experience; extending well beyond curriculum, assessment and pedagogy. The findings also demonstrate notable consistencies with prior qualitative investigations of OE. In addition to supporting the importance of several identified themes, for instance, online students in O'Shea et al.'s (2015) study also desired meaningful peer interaction, recognition of their online status, online-focused curriculum design, accessible and responsive instructors, and assistance with technology. More recently, Stone et al.'s (2016)

investigation of online first-in-family student experiences shows further consistencies with the present research, with regard to students' personal motivations to engage in OE and the perceived importance of family and employer support, as well as understanding and encouraging instructors. The consistencies between these studies and the present research indicate strong validity of the findings, suggesting participants' expectations and experiences are likely representative of the OSE. In addition, the identified importance of several factors reflect many of Stone's (2017) guidelines to improve online student retention and completion outcomes, providing strong empirical support for their application to a quality OSE. Specifically, appreciating online students' unique needs; establishing and adhering to OE quality standards; managing student expectations; supporting students to develop their skills; and explicitly prioritising online instruction and delivery at an institutional level, were shown to be highly valued by online students.

The present research findings bring together and supplement disjointed theory for online students' learning, academic performance, satisfaction and retention. It offers an informative overview of the OSE through consideration of the interconnection between identified variables and online student outcomes (Lee et al., 2013). Specifically, the present research suggests learning may facilitate online students' academic performance and satisfaction; academic performance may then enable online student satisfaction and retention; and satisfaction may contribute to online student retention. Recognising the connections between these online student outcomes places existing theory and research into perspective. The findings acknowledge the importance of each outcome; yet also articulate a gap in OE theory that brings these outcomes, and all contributing experiences, together. While CLT, ECT and aspects of Kember's Longitudinal-process Model of Drop-out from Distance Education (1989) may be applicable to OE, these do not in isolation articulate a quality OSE. Investigating low online student satisfaction, for instance, should involve consideration of ECT, in addition to CLT, in order to consider the contribution of learning and performance outcomes to online student satisfaction. Likewise, student retention research should consider learning/performance and satisfaction theory, if it is to consider the full breadth of potentially influential factors. Where research is concerned with one outcome, individual outcome theories

may be helpful; yet a thorough understanding of a quality OSE must consider the contribution of *all* outcomes, and connected experiences.

The present research demonstrates substantial complexity in understanding the OSE. The findings offer some support for prior research, recognising the importance of particular components; yet also suggest broader conceptualisation of OE is essential to appreciate the wide range of experiences and outcomes, which may contribute to a quality OSE. The circumstances in which students engage with their studies, and the expectations students bring with them to OE, in particular, provide an important lens through which the OSE may be interpreted, yet have been largely unexplored to date.

The findings also add much needed empirical support for the specific role of online delivery in online student outcomes (Twigg, 2003; Willging & Johnson, 2009), clarifying the particular characteristics of OE that may pose risks to online student outcomes. The present research suggests online students may perceive OE to require more work (Alexander et al., 2003; Huang et al., 2011; Tanner et al., 2009), greater concentration, better time management (Alexander et al., 2003; Huang et al., 2011), and more self-regulation (Serhan, 2010; Tanner et al., 2009), than on-campus education. Online students may also experience limits to instructor interaction (Serhan, 2010; Siebert et al., 2006; Tanner et al., 2009), and a heavy reliance on self-management (Serhan, 2010; Siebert et al., 2006), and technology (Antonis et al., 2011; Buchan & Swann, 2007; Packham et al., 2004); which may not be experienced by their on-campus peers. Where these factors are not actively considered when comparing online and on-campus student outcomes, therefore, online student outcomes may be confounded.

Clear empirical support for broader conceptualisation of the OSE, is provided, which considers the full lived experience of online students, and takes account of the particular conditions associated with online delivery. Where research and theory do not sufficiently consider all *MAC-ICE* (sub) themes and online student outcomes, it is possible these will mislead interpretation, and/or overlook critical factors. Consequently, further research is needed to verify the role of proposed (sub)

themes, and to formulate a more comprehensive model for OE quality, which considers the total OSE.

### **Practical implications for online education**

Opportunities to enhance the OSE are illuminated through deeper understanding of the expectations students bring with them to OE, and the subsequent experiences that were perceived to facilitate, or otherwise, strong online student outcomes. The following sections examine the practical implications of the present research, discussing ways in which each of the *MAC-ICE* themes may be considered and addressed, in order to enhance the OSE; in the context of learning, academic performance, satisfaction and retention outcomes, and the experiences that may contribute to these.

#### **Improving online student learning**

Learner *Motivation* and *Ability*, combined with institutional *Interaction* and *Curriculum*, were identified as having contributed to students' learning in the present research. It is feasible, therefore, that strategies which enhance students' motivation and ability, while strengthening interaction and curriculum, may help facilitate deeper learning in OE. The following section presents opportunities to enhance learning, through an appreciation of the lived experiences of online first-year university students.

#### ***Motivation***

The present research suggests learning may be influenced by online students' *Motivation*, specifically students' *concentration*. Where students are able to concentrate on their studies, they may learn more deeply. If they struggle to focus effectively on their work, however, students may resort to shallow learning strategies, and acquire/retain less knowledge as a result (Seo, 2009).

As an element of intrinsic *Motivation*, capacity to enhance concentration rests primarily with the learner. Students should be mindful, therefore, of their capacity to concentrate and manage potential distractions/interruptions, when considering OE.

They should proactively consider, plan for, and purposefully address challenges associated with their concentration. A strong commitment to their course (Horstmanshof & Zimitat, 2007; Klingsieck, Grund, Schmid, & Fries, 2013; Seo, 2009); interest in associated content (Klingsieck et al., 2013); prior content knowledge; good time management and self-regulation (Artino & Stephens, 2009; Klingsieck et al., 2013); manageable priorities; support from significant others (Klingsieck et al., 2013); good health; and access to a suitable study environment (Didarloo & Khalkhali, 2014), may help online students to concentrate more effectively.

Universities may also play a role in assisting students to concentrate. Alerting students to concentration challenges applicable to OE, and guiding them to avoid procrastination and manage distractions, for instance, may be helpful (Kikuchi, 2006; Klingsieck et al., 2013). In addition, interactive content (Klingsieck et al., 2013; Lo et al., 2011), a flexible curriculum that allows students to study at the most appropriate time/place (Kikuchi, 2006; Stewart et al., 2004), and an online delivery environment commensurate with on-campus conditions (Osborne et al., 2009), may facilitate deeper learning, by enhancing students' concentration. Active consideration of each of these factors, therefore, may enhance students' motivation, and subsequently improve their learning.

### ***Ability***

Online students' learning may be influenced by their *Ability*; specifically prior *content knowledge* (Terry et al., 2016). Prior knowledge may form a helpful base, upon which students are easily able to extend their knowledge, placing them at an advantage over less experienced peers. Learning may be enhanced, therefore, where online students have some awareness/understanding of course content, prior to commencing. Some students, nonetheless, may not have the opportunity to acquire *new* knowledge, where they already possess substantial expertise.

Again, *Ability* represents a learner construct, resting primarily on students' own efforts. Students may benefit, therefore, from familiarising themselves with their field of study prior to commencement. Prospective students might investigate topics likely to be covered in their course, for instance, by speaking with current/past



students, instructors and industry representatives. Able to conduct an informed self-assessment of applicable knowledge, students could then seek out additional support and resources to increase their content knowledge, as required.

Universities may also play a role in supporting students to anticipate, and/or obtain requisite content knowledge. Universities might assist students by clarifying the expected level of content knowledge, including mathematical knowledge, prior to commencement. Universities may choose to require content familiarity in the form of prior learning or work experience, as pre-requisites for associated courses (Terry et al., 2016; Wilson et al., 2011). Providing and promoting co-curricular opportunities to develop students' content knowledge may also be valuable (Menz & Jungic, 2015). Instructors should be mindful, nevertheless, students may commence with varied content knowledge, and some may face potential disadvantages in being less familiar with content. Assessing the level of knowledge upon commencement may enable instructors to adapt learning activities to suit students' knowledge levels, and/or to direct less experienced students to information or support that might assist them to quickly familiarise themselves with important content (Trentin, 2002). The above strategies may facilitate improved online student learning, through enhanced ability.

### ***Interaction***

The present research suggests online students' learning may be influenced by *content* and *peer Interaction*. Text-based materials may be less engaging and hard for online students to digest, encouraging surface learning strategies (Huang et al., 2011; Jones et al., 2009). In contrast, dynamic, and interactive learning materials, non-assessed activities and real-world assessment (Bradford, 2011; Kift, 2004; Lo et al., 2011; Oh & Kim, 2016; Signor & Moore, 2014; Tomas et al., 2015), may engage online students and encourage deep learning strategies. Learning may also be supported by advice and reassurance from other students (Antonis et al., 2011; Crosling et al., 2009; Paechter et al., 2010). Learning may be enhanced, therefore, where online students interact with highly engaging materials and activities; apply this learning to real-world assessment; and have opportunities for meaningful peer interaction. Students may anticipate meaningful peer interaction, and online courses

may require substantially more reading than students expect, relying heavily on text-based materials, furthermore; suggesting a need to also incorporate dynamic content and peer interaction in online courses, to satisfy online students' expectations.

Representing an institutional theme, Universities may hold primary responsibility for ensuring their online courses offer appropriate content and peer *Interaction*. Content interaction may be enhanced by designing learning materials and activities with online students in mind (Stone, 2017). Care should be taken in presenting information, avoiding an over-reliance on text and incorporating dynamic audio-visual tools, where possible. Universities should consider opportunities to utilise interactive tools, which encourage students' to engage actively with content, and with each other (Resop Reilly et al., 2012; Signor & Moore, 2014). Where discussions are required/assessed, furthermore, these should be built into students' workload and expectations, to ensure participation is manageable. Clear expectations for what should be posted (and where) should also be set, to minimise repetitive and superficial posts (Debozy, 2009; Martens-Baker, 2009).

Incorporating opportunities for formal and informal peer interaction may also support online students' learning. Facilitating a social context for learning and encouraging students to interact with their peers (not purely for marks), and recognising and rewarding valuable contributions to group discussions, may be helpful in capitalising on learning opportunities provided by peer collaboration and support (Debozy, 2009; Ryle & Cumming, 2007; Stone, 2017; Suler, 2004). OE may also be enhanced by opportunities for peer interaction beyond the course (Trentin, 2002), such as peer mentoring (Cohen et al., 2011; Lau, 2003), social networking (Kelm, 2011), and face-to-face interaction, where feasible (Nelson, Kift, & Harper, 2005; Zhang & Perris, 2004). Universities should guide and encourage students to develop learning networks outside their course, furthermore, where peer interaction may be hampered by distance.

In addition, instructor interaction may help to facilitate and enhance peer interaction opportunities (Delahunty et al., 2014; Lambrinidis, 2014; Loh & Smyth, 2010; Oh & Kim, 2016). Difficulties associated with online delivery, however, may limit opportunities for online students to interact meaningfully (Beard & Harper,

2002; Moody, 2004; Serhan, 2010). Guiding and encouraging students to interact in meaningful ways, and ensuring online conditions facilitate comparable peer interaction to on-campus courses, may ultimately improve online students' learning. Active consideration of content/peer interaction, and the aforementioned strategies, therefore, may facilitate improved online student learning, through of enhanced interaction.

### ***Curriculum***

Online students' learning may be influenced by *Curriculum challenge* and *relevance*. Manageable course content may be easier for students to understand, and, therefore, to acquire associated knowledge. Overwhelming workloads and difficult content, on the other hand, can be hard for students to cope with. Overly simplistic content, nonetheless, may be easy for students to understand, yet is unlikely to extend their knowledge substantially. Learning may also be influenced by a course's perceived relevance to students' personal and career/employment aspirations. Where courses, and associated activities, are clearly applicable to students' aspirations, learning may be enhanced (Almala, 2005; Crosling et al., 2009; Yager, 2000). Some students may find content overly theoretical, or to contradict their professional experience, however, demonstrating the importance of clarifying the potential application of learning activities. Students may also expect and hope their course will be challenging, yet may experience lesser, or greater, challenge than desired, suggesting the importance of ensuring all students are adequately challenged, but not overwhelmed, by their curriculum.

As an institutional theme, universities may hold primary responsibility for the provision of an appropriate *Curriculum*. Facilitating the right balance between challenge and workload appears essential to online students' learning. Providing opportunities for students to prepare for and supplement difficult course content may help reduce some student anxiety and facilitate more manageable challenge (Fike & Fike, 2008; Menz & Jungic, 2015; Xu & Jaggars, 2011), such as mathematical preparatory programs or dedicated tutoring/support services. Course difficulty should be considered in determining appropriate workloads in online courses, with more manageable workloads potentially enhancing students' learning. Instructors

should consider monitoring the degree of challenge perceived by online students, furthermore, and provide opportunities to stretch those who are insufficiently challenged, while ensuring others are not overloaded (Bradford, 2011). Clarifying if/how students may be able to obtain advanced standing for units that are unlikely to challenge them, may also ensure courses are better matched to student needs and experience. In addition, providing regular interaction with instructors (Antonis et al., 2011; Porras-Hernandez, 2000); engaging content (Huang et al., 2011; Jones et al., 2009; The Concord Consortium, 2006); meaningful peer interaction (Alexander et al., 2003; Beard & Harper, 2002; Cohen et al., 2011); and online delivery conditions commensurate with on-campus (Knowles & Kerkman, 2007), may assist online students to manage challenges during their first year.

Ensuring the relevance of course content to student aspirations may likewise enhance online students' learning. Clarifying student aspirations prior to selection might enable universities to better match students with their most applicable course (Lopez-Bonilla et al., 2012). Incorporation of activities that are clearly relevant to students' aspirations may also enhance learning during online courses. Opportunities to adapt learning activities to suit individual interests and aspirations, for instance, may facilitate more relevant experiences for all students (Almala, 2005). It is equally important universities ensure units within a course effectively relate to one another, building upon prior learning; and are applicable to the 'real world' (Garmston & Wellman, 1994; Lesgold, 2004; Yager, 2000). Instructors should clearly articulate why a theory or activity matters, and how it may apply to students' aspirations (Yager, 2000).

In addition, the degree of course difficulty may be influenced by students' academic skills, computer literacy (Packham et al., 2004), and content knowledge (Antonis et al., 2011; Ashcraft & Krause, 2007; Wilson et al., 2011). The perceived relevance of an online course may also be influenced by the experience and promise of rewards. With real-world application particularly important to Constructivist learning (Yager, 2000), providing opportunities to realise personal and professional rewards during the first year of an online course, for instance through work-integrated learning, may enhance the perceived relevance of activities and content, resulting in deeper learning (Orrell, 2011). Supporting students to develop their

academic skills, computer literacy and requisite content knowledge, while facilitating opportunities to apply their learning beyond the course, may assist students to manage curriculum challenges. Providing quality interaction, learning materials and online conditions, furthermore, may help facilitate a sufficiently challenging curriculum, which is clearly relevant, resulting in enhanced online student learning.

### ***Strategies to improve online student learning***

Overall, the present research suggests learning may be improved through strategies that seek to enhance students' motivation and ability, alongside efforts to facilitate meaningful interaction and an appropriate curriculum. Responsibility and capacity to improve online students' learning may rest with both students and their institution. Students may enhance their learning by ensuring they actively concentrate on their studies, avoid procrastination and manage distractions; and familiarise themselves with requisite content knowledge prior to commencement. Institutions may support students to concentrate and obtain requisite content knowledge while providing meaningful content and peer interaction, and a challenging and relevant curriculum. These experiences may be supported by alerting prospective students to concentration challenges associated with OE, and requisite knowledge, through application/enrolment processes and promotional materials, as well as university selection procedures. University support services and programs that upskill students early in their studies, along with targeted intervention strategies, may further enable online students' learning. In addition, learning may be enhanced by tailoring learning activities during a course to students' abilities, needs and aspirations; developing dynamic and engaging learning materials; articulating clear participation guidelines for discussions; and providing opportunities for formal and informal peer interaction.

### **Improving online student academic performance**

Alongside effective learning, learner *Motivation* and *Ability*, combined with institutional *Interaction*, *Curriculum* and *Environment* were identified as having contributed to academic performance. In addition to the aforementioned learning

strategies, it is feasible that strategies that enhance students' motivation and ability, while strengthening interaction, curriculum and the learning environment, may help facilitate stronger online student performance. The following section presents opportunities to enhance academic performance, through an appreciation of the lived experiences of online first-year university students.

### ***Motivation***

The present research suggests online students' capacity to produce work of a high quality, and achieve strong results, may be influenced by their *Motivation*; specifically their *concentration* (Griffin et al., 2013; Waschull, 2005). Where students do not focus effectively, or dedicate insufficient attention to their work, their performance may suffer. Students may struggle to concentrate as well as they hope, furthermore, suggesting a need to develop students' capacity, or enhance the conditions that may facilitate concentration, to meet students' expectations.

As highlighted earlier (see also *Motivation*, page 285), students may support their own concentration by proactively considering, planning for and purposefully addressing challenges associated with their attention and effort. Universities may also play a role in guiding and supporting students to anticipate and manage challenges associated with their concentration. In addition, consideration of students' commitment, interest and passion, content knowledge, organisation and time management, self-regulation, simultaneous priorities, peripheral support, health and wellbeing, and study environment; alongside content interaction, flexibility and online delivery; may contribute to enhanced concentration, and subsequent academic performance. Articulating the importance of deep learning strategies, furthermore, and connecting these to academic performance; while supporting students to learn and adopt such strategies, may encourage students to concentrate effectively, and enhance performance as a result (Decker & Beltran, 2015; Rosser, 2015).

### ***Ability***

Online students' academic performance may be influenced by their *Ability*, including their *academic skills* and *organisation and time management*. Students who commence with strong academic skills may be well equipped to succeed, while

less academically experienced students may struggle to understand assessment requirements, and perform poorly as a result (Cavanaugh & Jacquemin, 2015; Nelson, 2008; Richardson & Newby, 2006). Where students do not organise their workload and manage their time well, performance may also be jeopardised (Mason et al., 2015; Waschull, 2005). Students may commence uncertain of their course's time commitment, may underestimate time required to effectively engage and succeed in their course, or may not plan effectively for associated workloads. If students fall behind, they may be prevented from returning to a strong position, and unable to avoid substantial impacts to their performance as a result. These findings demonstrate a need to manage students' expectations of their time, and highlight the particular importance of online students' academic skills and organisation for their academic performance. Students may accurately predict prior academic experience to be advantageous in their course, furthermore, yet may underestimate the standard of work, time commitment, or academic skills required; or may lack sufficient preparation to cope with university-level assessment and heavy workloads.

As a learner theme, students may hold primary responsibility for enhancing their *Ability*. Investigation of the skills likely required for a course and the realistic time commitment, for instance, by speaking with current/past students, instructors and industry representatives, may enable students to assess their ability and seek out additional support and resources to develop requisite skills. Actively considering their academic skills and availability may help position online students to succeed. In addition, where students concentrate well (Debozy, 2009); have strong academic and technical skills; are familiar with course content; are able to regulate their own learning; receive support and accommodations from family/employers; are healthy; and are able to manage simultaneous priorities (Barron & D'Annunzio-Green, 2009; Promnitz & Germain, 1996), they may be well placed to allocate sufficient time to their studies.

Universities may also play a role in supporting students to anticipate and develop requisite skills. Students may benefit, firstly, from clarification of skills necessary to effectively engage and succeed in OE, prior to enrolment (Trekles Milligan & Buckenmeyer, 2008). Universities should clarify institutional expectations of the skills students will possess on entry, and connect these to

associated preparatory programs. Exposure to OE and example activities might also assist prospective students to accurately estimate the standard of academic skills required (Mupinga et al., 2006). Supporting students to upskill themselves upon commencing, during, or alongside the course, furthermore, may help mitigate the impact of skills deficits on online student performance (Fike & Fike, 2008; Haas, 2015; Rosser, 2015). Nevertheless, instructors should be mindful of potential stresses on students associated with developing these skills alongside learning course content during early semesters. This skill development load may be substantial, influencing students' capacity to engage and succeed in their course. Instructors might consider, therefore, assessing students' skill levels upon commencement, selecting sufficiently skilled students, or adapting course activities/workloads to enable less experienced students to catch up (Trekles Milligan & Buckenmeyer, 2008; Trentin, 2002). With meaningful feedback from instructors, and support from significant others and academic services, furthermore, online students may identify weaknesses and actively develop their academic skills (Boud, 2010; Crosling et al., 2009).

Ensuring students have an accurate understanding of the time required for OE prior to enrolment, and are able to plan and manage their time well during the course, may also be valuable. Clarifying the time required to participate in an online course, and alerting students to potential increases in workload or more intense periods, may help students anticipate and allocate sufficient time to their studies, and/or determine the most appropriate study load for their circumstances (Alexander et al., 2003; Anderson, 2008). Establishing what is a reasonable time commitment may be largely subjective, nonetheless, and may require specific evaluation for each unit. Ensuring course workloads effectively consider the time-demands of OE, and the broader context of online students' lives, may enable students to engage effectively in their studies (Alexander et al., 2003; Promnitz & Germain, 1996). Assisting online students to establish and adhere to realistic time management strategies or study routines may also help students manage their workload (Anderson, 2008; Decker & Beltran, 2015). Supplementing this, online courses that offer meaningful interaction with instructors (Decker & Beltran, 2015; Merriam & Bierema, 2014); dynamic content and active use of organisational tools (Decker & Beltran, 2015); manageable peer interaction; some flexibility (Nelson, 2008); a



moderate challenge (Debozy, 2009); and access to reliable and innovative technology, may facilitate a manageable workload.

### ***Interaction***

The present research suggests online students' academic performance may be influenced by *instructor* and *peer Interaction*. Where instructors offer meaningful and regular guidance, feedback and support, online students can effectively address assessment criteria, and perform well as a result (Boud, 2010; Elliott & Adams, 2011). In contrast, where students experience inconsistent or limited communication with instructors, they may struggle to complete assessment effectively and perform poorly. Students may expect to receive meaningful instructor interaction, furthermore, suggesting a need to facilitate high quality instruction, to meet students' expectations. Poor peer contributions, furthermore, may jeopardise students' marks on group assignments (Nagel, 2009; Paulus & Roberts, 2006). Students may not anticipate group work or the dependence on others' input and find this frustrating, particularly when other students are disorganised or do not contribute to the standard expected; suggesting a need to facilitate and moderate meaningful peer interaction.

Universities may hold primary responsibility for enhancing institutional *Interaction*. In particular, the findings demonstrate the importance of establishing clear instruction standards, incorporating instructor participation, responsiveness and interaction; and actively ensuring these standards are adhered to (Australian Government, 2017b; Stone, 2017). Instructors should be encouraged to participate in discussions, and respond to students in timely and meaningful ways (Antonis et al., 2011; Mason et al., 2015; Mupinga et al., 2006). Informal opportunities to speak synchronously with instructors and/or peers, as well as non-assessed learning activities, may help online students to clarify, practice and check their understanding; while also keeping them connected and engaged in their studies (Dowel & Small, 2011; Huang et al., 2011; Mills, 2015; Signor & Moore, 2014).

Enhancing academic performance demands careful and active management of student expectations for instructor interaction. Instructors should clarify expectations for their contactability early on, and advise what will be expected of students if/when they experience difficulties (Scutter et al., 2011; The Concord

Consortium, 2006). Encouraging students to be assertive in seeking clarification, explaining who to contact and how, furthermore, may help mitigate occasions where instruction may fail to meet expected standards.

Articulating expectations for group participation, along with guidance on connecting with group members who may be in different locations, may be helpful in minimising complications from group work (Loh & Smyth, 2010). Where discussions are required/assessed, furthermore, instructors should build these into student workload and time expectations, to ensure these are manageable. Clear expectations should also be set for group contributions, taking into account potential logistical challenges, and guiding students to manage these, with the purpose and value of group work made explicit (Kuit & Fildes, 2011). In addition, assessment design should ensure academic success does not rely exclusively on collaboration/input from others. For instance, instructors might provide opportunities to compensate for others' poor performance, or rotate group membership. Instructor guidance and moderation of group work, along with online conditions that facilitate equivalent experiences to on-campus programs, may further enhance the quality and value of peer interaction.

Interaction with instructors, and subsequent performance, may also be influenced by students' self-regulation. Where online students are proactive and approach instructors for further information, they may clarify instructions and effectively address assessment criteria, resulting in stronger academic performance. Encouraging students to be proactive in seeking assistance, in addition to ensuring a high standard of instructor interaction, and quality online conditions, therefore, may enhance online academic performance, through meaningful interaction.

### ***Curriculum***

*A flexible and challenging Curriculum* may contribute to online students' academic performance. Online courses that require students to participate at specific times may limit students' capacity to engage, and, therefore, to perform their best. Students may expect OE to offer substantial flexibility and convenience, furthermore, and may not anticipate requirements to participate at specific times. Where students are faced with complex and difficult content, particularly

mathematics (Ashcraft & Krause, 2007), they may also struggle to complete associated assessment, resulting in lower grades. Some students may experience less challenge than desired, however, suggesting it may be equally important for online courses to incorporate adequate challenge, to meet students' expectations.

Again, as an institutional factor, an enhanced *Curriculum* is driven primarily by the institution. Providing opportunities for asynchronous collaboration, and/or the capacity for students to progress at their own pace, for instance, may facilitate greater flexibility and, subsequently, enhance online student performance (Allen & Seaman, 2014; Case & Davidson, 2011; The Concord Consortium, 2006). Where online students are required to participate in synchronous activities, however, this expectation needs to be clarified up-front; or opportunities built into the course to accommodate students who cannot meet such requirements (The Concord Consortium, 2006). Some online students may also appreciate opportunities to progress more quickly through their course, through summer/winter semesters (Clinefelter & Aslanian, 2015). In addition, strategies that help facilitate a balance between challenge and workload may further support student success, such as preparatory/developmental programs, opportunities to stretch more advanced students and credit for prior learning (see also *Curriculum*, page 289). Meaningful interaction with instructors, content and peers; and comparable conditions to on-campus students, furthermore, may facilitate a more manageable challenge; while reliable and innovative technology may enable online students to engage with their course in flexible and convenient ways (Beard & Harper, 2002; Heaton-Shrestha et al., 2009).

Curriculum flexibility and challenge, and subsequent performance, may also be shaped by the learner. Where students have strong academic and technical skills, and are familiar with content, the challenges associated with their course may be manageable. Consideration of students' ability, therefore, may facilitate a manageable, yet meaningful challenge for online students, ultimately improving online students' academic performance.

## ***Environment***

The present research suggests academic performance may be influenced by the *Environment*; specifically *online delivery* (Breen et al., 2003; Waschull, 2001; Wynegar & Fenster, 2009). Where students do not have access to conditions perceived as equivalent to their on-campus peers, they may face greater challenges and feel less able to complete assessment effectively, resulting in weaker academic performance. Students may find online delivery to be of lower quality, more costly and more demanding than anticipated, furthermore; suggesting a need for improved online conditions, if students' expectations are to be met.

Universities may hold the greatest capacity to enhance the learning *Environment*. Establishing best-practice standards for online delivery, and employing mechanisms to monitor the implementation of such standards, may help to ensure quality online conditions (Australian Government, 2017b; Stone, 2017). The perception of poor quality associated with online delivery, nonetheless, highlights a need for universities to ensure they facilitate equivalent opportunities for online students, as they provide for on-campus students (Smith, 2005).

Universities can help address inaccurate expectations of online delivery, by clarifying any differences between online and on-campus programs prior to enrolment; and articulating how these differences are expected to be accommodated/addressed, by both the institution and students (Alexander et al., 2003; Nelson, 2008). Marking schemes should also ensure they adequately consider students' reasons for enrolling online and fit associated course design/instruction. In addition, providing opportunities for online students to connect with others, in similar ways to on-campus student interaction, may reduce the sense of isolation associated with online delivery (Cohen et al., 2011; Lau, 2003; Trentin, 2002).

Online delivery, and subsequent performance, may be influenced by instructor interaction and technology. Limited interaction with instructors and technical difficulties may create additional challenges for online students, facilitating poorer conditions, than for equivalent on-campus programs. The resultant online conditions may also contribute to additional complications, including poor concentration, a propensity for competing priorities, limited peer interaction, and

increased difficulty (Alexander et al., 2003; Huang et al., 2011; Tanner et al., 2009); as well as a heavy reliance on self-regulation (Serhan, 2010; Tanner et al., 2009) and technology. A lack of synchronous communication in online programs, furthermore, may pose difficulties and delays in peer/instructor interaction (Serhan, 2010; Siebert et al., 2006; Tanner et al., 2009). Active consideration of these factors, therefore, may contribute to improved academic performance, through an enhanced environment.

### ***Learning outcomes***

In addition to the aforementioned *MAC-ICE* themes, online students' academic performance may be influenced by the depth of knowledge acquired during their course. Where students learn deeply, they may apply their knowledge effectively to assessment, and perform well as a result. In contrast, where students do not understand particular content, or learn superficially, they may struggle to complete associated assessment to a high standard, and achieve lower grades.

Experiences connected to online students' learning may subsequently enhance their academic performance. Students may support their own learning by ensuring they actively concentrate on their studies, avoid procrastination and manage distractions; and familiarise themselves with requisite content knowledge prior to commencement. Universities may also aid students' learning by ensuring students are informed of concentration challenges associated with OE and requisite knowledge; upskilling students early in their studies; tailoring learning activities to students' abilities, needs and aspirations; developing dynamic and engaging learning materials; articulating clear participation guidelines for online discussions; and providing opportunities for formal and informal peer interaction. In addition, consideration of other experiences contributing to learning, including concentration, content knowledge, content interaction, peer interaction, challenge and relevance; may enable online students to learn well, and subsequently improve their academic performance (see also *Strategies to improve online student learning*, page 291).

### *Strategies to improve online student academic performance*

In summary, the present research suggests academic performance may be improved through strategies that seek to enhance students' motivation and ability, alongside efforts to facilitate meaningful interaction, an appropriate curriculum, suitable environment, and strong learning outcomes. Responsibility and capacity to improve online student performance may rest again with both students and their institution. Students may support their own success by ensuring they actively concentrate on their studies, develop their academic skills (actively addressing potential weaknesses), and manage their time well. Universities may then assist students to succeed by encouraging and supporting them to concentrate, develop requisite skills and plan for the associated time commitment; while facilitating meaningful instructor and peer interaction, a moderately challenging curriculum, and conditions equivalent to those offered in on-campus programs.

The above experiences may be supported through a number of strategies. Exposure to the skills and time commitment associated with an online course may assist students to gauge their ability and proactively address weaknesses. Proactive and clear advice about challenges associated with concentration in OE, requisite skills, time commitments, instructor availability, the degree of flexibility and differences between online and on-campus programs may further assist students to develop accurate expectations of OE. Clear application/enrolment and selection processes, and accurate promotional materials may be especially important. During the course, universities may enable student success by considering the diversity of skillsets upon commencement; ensuring a manageable challenge and workload for online students (who may hold several simultaneous commitments); ensuring consistent standards of instruction; establishing clear expectations for students' participation/input into group assignments; providing opportunities for asynchronous participation; enabling students to progress at their desired pace; and establishing standards for online delivery, equivalent to on-campus courses, with mechanisms to monitor implementation of such standards. In addition, raising awareness of applicable support and developmental programs, encouraging proactive help-seeking behaviour, and providing tailored support, may assist students to address associated challenges during their course.

## **Improving online student satisfaction**

Learner *Motivation* and *Circumstances*; combined with institutional *Interaction, Curriculum* and *Environment*; as well as learning and academic performance outcomes, were identified as having contributed to online students' satisfaction. It is feasible that strategies, which enhance students' motivation and circumstances, strengthen interaction, curriculum and the learning environment, and enhance learning and academic performance outcomes, may help facilitate online students' satisfaction. The following section presents opportunities to enhance online student satisfaction, through an appreciation of first-year university students' lived experiences of OE.

### ***Motivation***

The present research suggests all *Motivation* sub-themes may contribute to online student satisfaction. Where students are able to *concentrate* effectively on their studies; maintain their *commitment* to long-term goals (Antonio & Tuffley, 2015; Chen et al., 2017; Chiu et al., 2007); and have strong *self-efficacy* (Palmer & Holt, 2009; Shen et al., 2013; Wu et al., 2006), they may feel proud of their accomplishments, and satisfied with their OSE. In addition, students may enjoy their course and feel more satisfied with their OSE, where they hold a deep *interest* in the course subject matter (Nonis & Fenner, 2011; Sansone et al., 2012; Togia et al., 2012). *Rewards* associated with students' aspirations, furthermore, may drive them to enrol in their online course (Benson et al., 2010); while the opportunity to apply their learning beyond the course may motivate and reassure students of the value offered by their experience (Ciampa, 2014). Having realised personal, intellectual, professional, and/or social/community rewards, students' overall satisfaction may increase.

Online students may struggle to maintain their desired level of motivation throughout their first year of study, and they may not always be well placed to achieve satisfaction. Students may be unable to concentrate as well as they hope, and struggle to maintain their commitment. Students may commence confident they are capable of succeeding, nonetheless, and where reassured of this belief, they may express satisfaction; suggesting a positive outlook, supported and encouraged during

OE, may contribute to a more satisfying experience (Sutton & Griffin, 2004). In addition, online students may predict they will find their course interesting, though anticipate some aspects will be less exciting; suggesting they are not naïve in expecting all components of their experience to be interesting, yet the more interesting content they experience, the more satisfied they might be.

Responsibility for learner *Motivation* rests primarily with the student. Students, therefore, should proactively consider, plan for and purposefully address challenges associated with their motivation. In addition to strategies which contribute to enhanced concentration (see *Motivation*, page 285); commencing with a strong commitment to their course and holding study as a high priority, by adopting clear, long-term career and learning goals, may strengthen online students' motivation, and subsequent satisfaction (Antonio & Tuffley, 2015). Selecting courses that align well to students' interests and aspirations, and in which they are confident they can succeed, may also be beneficial. Efforts to apply learning beyond the course and take advantage of potential personal, intellectual, professional, and/or social/community rewards, furthermore, may help students' maintain their motivation during their online course.

Universities may also play a role in motivating students to anticipate and manage motivational challenges. Raising awareness of services/programs available to support students' concentration and providing tailored assistance to address procrastination (Klingsieck et al., 2013), for instance, may encourage students' concentration. Courses which peak students' interest, while providing a moderate challenge that is clearly applicable to relevant real-world scenarios, may enhance students' commitment to their course. Challenges to students' commitment may also be overcome with meaningful instructor interaction, and support from university services. In addition, strategies which ensure students commence with a strong commitment to their course, with clear, long-term career and learning goals, may be beneficial (Antonio & Tuffley, 2015; Chen et al., 2017). Ensuring students experience interesting content, sufficient challenge, and relevant content, may also strengthen online students' commitment.



Clarifying the skills and knowledge needed to access, participate and succeed in OE, while actively guiding and encouraging students to further develop these skills during their course, may enhance students' self-efficacy, and improve student satisfaction. A learning environment that empowers students to control their own learning and provides access to applicable resources may facilitate development of enhanced self-efficacy (Heaton-Shrestha et al., 2009; Law et al., 2010). In addition, prior research suggests self-efficacy may be influenced by gender, experience of online/university learning, and by time spent online; with female and more experienced students potentially demonstrating greater self-efficacy (Kuo et al., 2013; Shen et al., 2013). Paying close attention to students with less experience in online/university environments, as well as male students, and actively supporting these students to develop their self-efficacy, therefore, may be valuable. Selecting students with greater self-efficacy upon commencement, furthermore, could reduce the propensity for low self-efficacy to jeopardise online student satisfaction (Nonis & Fenner, 2011). Strong academic skills and computer literacy, content knowledge, and meaningful interaction with instructors that clarifies students' strengths/weaknesses and offers encouragement and guidance in how to improve, may also help online students identify weaknesses and actively remedy these (Darrow et al., 2002; Dluzewska, Lindsay, & Dianne, 2011; Huntly & Donovan, 2009). Limited or confusing communication with instructors, on the other hand, may render students unsure of what is required or how to improve, prompting them to doubt their capacity to succeed.

Matching online students with courses closely aligned to their interests, and maintaining a connection to those interests throughout their studies, may enhance student satisfaction (Ciampa, 2014; Nonis & Fenner, 2011; Sansone et al., 2012). Encouraging interaction may also help stimulate students' interests and engagement (Kim, 2009). Assessments that are tailored to individual interests may further ensure the motivational benefits associated with students' interests and passion are maintained (Wang, 2009). In addition, normalising waning interest, and supporting students to sustain their motivation during tough times, may help mitigate the impact of any lost interest (Debozy, 2009). Support, enthusiasm and encouragement from significant others and instructors (Stone et al., 2016), furthermore, may inspire

students to invest sincerely in their online course. Content that builds on and extends prior knowledge, challenges students, and is clearly applicable to students' aspirations, may reinforce online students' interest in their studies. Enthusiasm from significant others and instructors, along with dynamic materials/activities and an active learning community, may inspire further interest, stimulate curiosity and facilitate an enjoyable experience.

Finally, facilitating and promoting rewarding opportunities throughout a course may enhance online student satisfaction. Yager (2000), for instance, suggests emphasising the personal and professional benefits of learning activities, may improve students' motivation. Highlighting the application of associated learning activities to students' aspirations, may help to draw students' attention to such rewards. Opportunities to apply learning outside the online course may also be highly valued (Pridham & Deed, 2012; Yager, 2000). In addition, interest from prospective students may be enhanced by clearly articulating potential rewards in course prospectuses.

### *Circumstances*

Online students' satisfaction may be influenced by their *health and wellbeing Circumstances*. Where students experience substantial stress, illness, disability, or personal crises, they may be prevented from investing fully in their course, resulting in disappointment. Students may accurately predict chronic illness to be problematic, furthermore, yet may be unable to prevent poor health influencing their studies.

Mitigating the impact of poor health on student satisfaction relies heavily on students' active management of their wellbeing. Students should consider and plan for potential impacts of chronic health problems and potential illness. Familiarising themselves with extension procedures and available support, for instance, may enable students to reduce some impacts of health concerns. Efforts to organise their time well (Hafner, Stock, & Oberst, 2015), and manage competing priorities (Bergin & Pakenham, 2015; Reynolds, 2011), furthermore, may reduce online students' stress, supporting their wellbeing, and increasing satisfaction.

Again, universities may also assist students to manage their health. Providing clear information and advice on what to do in the event illness or personal issues affect students' capacity to engage with their studies, and where to get assistance, may go some way towards reducing students' anxiety associated with unanticipated illness (Promnitz & Germain, 1996; Reynolds, 2011). Given such support may be insufficient to mitigate illness, however, it would be valuable to consider further ways in which online students and universities might accommodate significant (unavoidable) interruptions to study; enabling students to catch up, with minimal impact to subsequent student workload. For instance, developing alternative fast-tracked assessment tasks, or enabling student enrolments to extend into semester breaks, may help to facilitate online student satisfaction. As some students may explicitly choose OE as a means to accommodate disability (Case & Davidson, 2011; Henry et al., 2014), furthermore, considering ways in which OE may better accommodate students with chronic illness or disability likely to affect their availability or energy for study, may enable more students to effectively participate in, and complete online courses.

Online students' health and wellbeing, and subsequent satisfaction, may also be influenced by the experience of overwhelming challenge (Bergin & Pakenham, 2015), and technical difficulties (Beard & Harper, 2002). Meaningful peer interaction, however, may reduce students' stress and anxiety, facilitating a more satisfying experience (Bergin & Pakenham, 2015; Wilcox et al., 2005). Active consideration of these factors, therefore, may facilitate improved wellbeing, and enhance online student satisfaction as a result.

### ***Interaction***

The present research suggests online students' satisfaction may be influenced by *instructor*, *content* and *peer Interaction*. Encouraging, active and responsive instructors may facilitate a more enjoyable and satisfying experience (Dziuban et al., 2015; Elliott & Adams, 2011; Paechter et al., 2010); while a lack of regular or meaningful interaction may disappoint and frustrate online students. Satisfaction may also be increased where students engage with dynamic and interactive learning materials (Calli et al., 2013; Huang et al., 2011; Kuo et al., 2013); while static, text-

based materials may disengage and bore students. In addition, students may feel lonely and disconnected from their institution, where peer interaction is limited or less meaningful, and they may feel less satisfied as a result. Where students are able to interact in meaningful ways, both within and outside of their course, however, they may have a more satisfying experience (Kuo et al., 2013; Lo et al., 2011; Sinclair, 2011). Online student satisfaction may be increased, therefore, where students are able to connect and communicate in meaningful ways with instructors and peers; and engage with dynamic and interactive learning materials.

Online students may expect substantial guidance, feedback and support from their instructors, and meaningful content and peer interaction. Where students' interaction expectations are met, or exceeded, they may feel satisfied with their experience. In contrast, online students may feel frustrated, disappointed, and neglected by their university, where these expectations are not met. The degree to which online students' interaction expectations are met, therefore, may influence the extent to which students are satisfied with their OSE (Chiu et al., 2007; Lee, 2010; Oliver, 1980). Considering and managing student expectations may thus help to facilitate improved online student satisfaction.

Universities may hold primary responsibility for facilitating *Interaction* in online courses. Universities may enhance interaction, and subsequent satisfaction, by incorporating dynamic audio-visual and interactive materials where possible; facilitating opportunities for formal and informal peer interaction; providing guidance on what should be posted to discussion boards and how to manage group work; clarifying expectations for instructor availability and support; encouraging students to be assertive in seeking assistance; and establishing clear standards for instruction that are actively adhered to. In addition, strategies which strengthen students' self-regulation and online delivery conditions, may empower students to interact in meaningful ways with content, instructors and peers; and subsequently enhance their satisfaction (see also *Interaction*, pages 287 and 295).

### ***Curriculum***

Online students' satisfaction may be influenced by the degree of *challenge* and *relevance* provided by their *Curriculum*. Online students may anticipate and

hope their course will be challenging, and where these expectations are met, they may feel satisfied, having overcome difficulties and achieved something that was not easy (Sinclair, 2011). Where their course is less difficult than expected, or is especially challenging, however, online students may feel less satisfied. Facilitating a manageable challenge, which meets students' expectations for course difficulty, therefore, may enhance online student satisfaction.

Students may also expect their course to offer substantial benefits to future employment and careers, and where these expectations are met (or exceeded), they are able to clearly connect their learning to their aspirations, and may feel more satisfied as a result (Wu et al., 2006). In contrast, where a course fails to meet students' relevance expectations, they may find it less worthwhile, and feel dissatisfied with their OSE (Calli et al., 2013; Lee, 2010). Considering online students' relevance expectations, therefore, may enhance their satisfaction (Bhattacharjee, 2001; Lee, 2010; Wu et al., 2006).

Universities hold primary responsibility for developing *Curriculum*. Universities may ensure a quality curriculum, and improve subsequent online student satisfaction, by providing opportunities for students to prepare for, and supplement difficult course content; monitoring the degree of challenge perceived by online students; providing opportunities to stretch more advanced students, while ensuring others are not overwhelmed; clarifying credit for prior learning processes; matching students with the most applicable course for their aspirations; facilitating opportunities to adapt activities to suit students' aspirations; and ensuring units within a course effectively complement one another, and are applicable to the real world. In addition, the experience of rewards, strong academic skills, computer literacy, content knowledge, instructor/content/peer interaction, and online delivery conditions equivalent to on-campus; may ultimately improve online students' satisfaction, facilitating a relevant and moderately challenging experience (see also *Curriculum*, page 289).

### ***Environment***

The present research suggests student satisfaction may be influenced by the *Environment*, and conditions associated with *online delivery* (Palmer & Holt, 2009;

Parsons-Pollard et al., 2008; Waschull, 2001). Though students may anticipate challenges associated with OE, online delivery conditions may be poorer than expected, particularly when compared to perceptions of on-campus education. Online students may feel especially isolated, under-supported, and frustrated by technical difficulties; believing on-campus programs would offer better opportunities, and a more positive experience. Inconsistencies between students' perceived quality of their OSE and institutional expectations of online students, as well as high costs, may also lead online students to feel exploited. Where OE is the only viable option to engage in university studies, however, students may feel satisfied they are at least granted this opportunity (Nonis & Fenner, 2011; Stone et al., 2016; Waschull, 2001). Ensuring the opportunities and conditions associated with online delivery are equivalent to those available on campus, or appropriately mitigating any differences, therefore, may facilitate a more positive and satisfying experience.

Universities may hold primary responsibility for ensuring a quality *Environment*. Universities should establish best-practice standards for online delivery, which ensure online conditions are equivalent to those provided on-campus; and employ mechanisms to monitor the implementation of such standards. In addition, meaningful instructor interaction and reliable technology may enhance online delivery conditions, subsequently improving student satisfaction (see also *Environment*, page 298).

### ***Learning outcomes***

In addition to the aforementioned *MAC-ICE* themes, online students' satisfaction may be influenced by the depth of learning acquired during their course (Lo et al., 2011). Where students learn deeply, they may find their experience more worthwhile, and feel more satisfied as a result. Where they are unable to acquire sufficient *new* knowledge, however, students' expectations may be challenged, and they may feel less satisfied with their OSE, questioning the value of their course (Bhattacharjee, 2001; Lee, 2010; Wu et al., 2006).

Students may support their own learning by ensuring they actively concentrate on their studies, avoid procrastination and manage distractions, and

familiarise themselves with requisite content knowledge prior to commencement. Universities may enable students' learning by informing students of applicable concentration challenges and requisite knowledge; upskilling students early in their studies; tailoring learning activities to student ability, needs and aspirations; developing dynamic and engaging learning materials; articulating clear discussion guidelines; and providing opportunities for formal and informal peer interaction. In addition, strong concentration, content knowledge, content interaction, peer interaction, challenge and relevance; may enable online students to learn well, and subsequently enhance their satisfaction (see also *Strategies to improve online student learning*, page 291).

### ***Academic performance outcomes***

Online students' satisfaction may also be influenced by their academic performance (Cherry et al., 2003; Dziuban et al., 2015). Where students perform well, they may feel proud and satisfied with their experience. In contrast, if students perform worse than desired or expected, they may express disappointment.

Academic performance, and subsequent satisfaction, may be improved by students' efforts to actively concentrate on their studies, develop their academic skills and manage their time well; as well as institutional support programs/services; exposure to the skills and time commitment associated with an online course; proactive and clear advice about OE requirements, instructor availability, the degree of flexibility and differences between online and on-campus programs; considering the diversity of student skillsets upon commencement; ensuring a manageable challenge and workload for online students; ensuring consistent standards of instruction; establishing clear expectations for students' participation in group assignments; providing opportunities for asynchronous participation; enabling students to progress at their desired pace; and establishing standards for online delivery equivalent to on-campus courses, with mechanisms to monitor implementation of such standards. In addition, effective concentration, academic skills, organisation and time management, instructor/peer interaction, flexibility, challenge, and online delivery conditions may facilitate stronger academic

performance, increasing online students' satisfaction (see also *Strategies to improve online student academic performance*, page 300).

### ***Strategies to improve online student satisfaction***

In summary, the present research suggests online student satisfaction may be improved through strategies that maximise students' motivation and circumstances, alongside efforts to facilitate meaningful interaction, an appropriate curriculum, suitable environment, and strong learning and performance outcomes. Responsibility and capacity to improve online students' satisfaction may sit with both students and their institution. Students may facilitate their own satisfaction by ensuring they actively concentrate, maintain commitment to their studies, have confidence in their capacity to succeed, apply their learning in meaningful ways, and actively manage their health. Universities may also enable students' satisfaction by supporting them to maintain their motivation and manage their health; while providing meaningful instructor, content and peer interaction, a moderately challenging and clearly relevant curriculum, and online conditions equivalent to those offered on campus.

The above experiences, and subsequent satisfaction, may be supported through a range of strategies. When considering OE, students should be mindful of their capacity to concentrate and commit to their studies; and proactively plan for, and purposefully address associated challenges. Adopting clear, long-term career and learning goals, and selecting courses that align well to their interests and aspirations, and in which they are confident they can succeed, may support students to sustain their motivation. Efforts to apply learning outside the course and take advantage of potential personal, intellectual, professional, and/or social/community rewards, furthermore, may help online students' remain motivated throughout their first year.

Universities can assist students to anticipate and manage these challenges, and facilitate institutional conditions conducive to satisfaction. Providing clear, readily accessible information about concentration challenges; applicable skills and knowledge; what to do in the event of illness; where to get assistance; expected instructor accessibility and support; and the differences between on-campus and OE, with expectations for how these are accommodated/addressed, may assist students to establish accurate expectations of OE. Selecting students who are able to



demonstrate confidence, interest and strong commitment to their course, and considering prior learning, may also position students for a satisfying experience. Highlighting the application of learning activities to students' aspirations, with opportunities to apply learning beyond the course, may further help students realise the motivational rewards of their course.

In addition, universities may directly support student satisfaction by purposefully designing courses and associated materials for OE. Online courses should incorporate dynamic audio-visual and interactive tools; meaningful opportunities for formal and informal peer interaction; clear standards for instructor guidance, feedback and support, which are actively monitored and consistently adhered to; opportunities to challenge more advanced students, without overwhelming others; opportunities to adapt activities to students' interests/aspirations; clearly demonstrated real-world application; and conditions which are commensurate with on-campus courses. Communicating clear expectations for participation in group activities, and consideration of associated workload, may also facilitate enhanced satisfaction. Providing opportunities to interact with peers outside of the course, encouragement to develop students' external learning networks, as well as developmental programs, furthermore, may enable students to access support necessary for a satisfying experience.

### **Improving online student retention**

*Learner Motivation, Ability and Circumstances*; combined with institutional *Curriculum and Environment*; and academic performance and satisfaction outcomes, were identified as having contributed to online student retention. It is feasible that strategies, which enhance students' motivation, ability and circumstances; strengthen the curriculum and learning environment; and facilitate academic performance and satisfaction outcomes, may help increase online student retention. The following section presents opportunities to increase student retention, through an appreciation of the lived experiences of online first-year university students.

### ***Motivation***

The present research suggests online students' retention may be influenced by their *Motivation*, specifically their *commitment* (Kember, 1989; Lau, 2003). Where students hold a weak commitment to their course, they may view their persistence as less important, and elect to withdraw from their online course. Online students may accurately expect their commitment to be important, furthermore, yet find it difficult to maintain this commitment throughout their studies. Online students may benefit, therefore, from development and support to sustain their commitment, in order to meet students' own expectations, and minimise attrition.

Responsibility for learner *Motivation* may rest primarily with the student. Students may enhance their commitment, and subsequently enable their retention, by holding study as a high priority and adopting clear, long-term career and learning goals. Universities may support students to maintain their commitment by selecting students with strong commitment to their course; designing interesting and moderately challenging curriculum that is clearly applicable to relevant real-world scenarios; and supporting students to overcome challenges to their commitment. In addition, interest in course topics, peripheral support, meaningful instructor interaction, a moderate challenge and relevant content, may strengthen online students' commitment to course completion, and ultimately increase their retention (see also *Motivation*, page 301).

### ***Ability***

Online student retention may be influenced by students' *Ability*, specifically their *organisation and time management*. Where students are unable to manage their time effectively and fall behind, they may withdraw from some units to reduce their study load, or consider dropping out of their course (Hyllegard et al., 2008; Morgan & Tam, 1999; Packham et al., 2004). Students may underestimate the time required for study, or their availability, furthermore, which may exacerbate these difficulties. Ensuring students are prepared and supported to manage their time well, therefore, may enhance online student retention.

*Ability* is primarily a learner responsibility. Students may enhance their organisation and time management, and subsequent retention, by investigating the likely time commitment, and ensuring availability to dedicate the necessary time to their studies. Universities may support students to manage their time, by clarifying the time required for an online course, and alerting students to potential increases in workload or more intense periods; and ensuring course workloads effectively consider the time-demands of OE, and online students' circumstances. In addition, strong concentration, academic skills, computer literacy, content knowledge, self-regulation, management of simultaneous priorities, peripheral support, good health, meaningful instructor/content/peer interaction, flexibility, a manageable challenge and reliable technology; may assist online students to develop their organisational skills; and subsequently increase online student retention (see also *Ability*, page 292).

### ***Circumstances***

The present research suggests online student retention may be influenced by *simultaneous priorities* alongside study, and students' *health Circumstances*. While students may anticipate simultaneous priorities to be challenging, they may underestimate difficulties meeting all demands for their time, and/or the potential for other priorities to interfere with study, and vice versa. When unable to effectively balance these priorities, online students may elect to reduce their load to a more manageable time commitment, or withdraw altogether, reprioritising efforts on their most important commitments (Kember, 1989; Moore & Greenland, 2017; Packham et al., 2004; Promnitz & Germain, 1996).

Online student retention may also be influenced by students' wellbeing and stress (Daugherty & Lane, 1999; Promnitz & Germain, 1996). Poor health and overwhelming stress may interfere with students' participation in learning activities. Upon realising they might struggle to complete activities to their desired standard, students may consider withdrawing. Despite awareness of such challenges, online students may be unable to prevent poor health and personal issues from influencing their experience. Additional strategies may be necessary, therefore, to facilitate retention, where students are unwell.

With students' *Circumstances* representing a learner theme, students may hold greatest capacity to address their simultaneous priorities and health. In addition to proactively managing their health and wellbeing (see *Circumstances*, page 304), students should consider, plan for and purposefully manage their availability, to ensure they are able to cope with study alongside other commitments. Organising support for family and household responsibilities, for instance, may enable students to prioritise their studies.

Universities may also support students to manage their circumstances. Clarifying the required time commitment for an online course, highlighting the significance of study as a commitment in its own right, and encouraging students to thoroughly consider potentially competing priorities prior to enrolment, may enable students to realistically prepare for OE, and help them adapt their lifestyle and commitments to suit their priorities (Alexander et al., 2003; Anderson, 2008). Advising online students to select the most suitable study load for their availability, or to consider reducing other responsibilities to ensure availability for study, may also prepare students to accommodate simultaneous priorities effectively, and reduce attrition associated with external commitments. In addition, encouraging students to discuss course demands with significant others, and to seek assistance in managing non-study commitments, may free students up to prioritise and persist with their studies. Requirements for scheduled participation, and non-negotiable due dates, furthermore, should be clearly articulated upon commencement, so these can be accommodated within students' busy lives. Strong support and accommodations from significant others may allow online students to prioritise their course by reducing other responsibilities; and subsequently increase online student retention (Carr, 2000; Serhan, 2010; Stone et al., 2016).

Supporting students to plan and manage their availability may help reduce the impact of simultaneous priorities (Anderson, 2008; Decker & Beltran, 2015). It is important, nonetheless, to acknowledge the importance online students may place on their work and family commitments. OE may be explicitly sought as a means to accommodate other priorities. There may be opportunities, therefore, for universities to better support online students, by developing ways to accommodate these priorities further alongside an online course. Providing flexibility to pause or adjust

students' participation, or granting extensions when they are unable to balance competing priorities, or when other responsibilities change, for instance, may enable students to better manage their studies alongside additional commitments (Heaton-Shrestha et al., 2009; Moore & Greenland, 2017; Mupinga et al., 2006; Serhan, 2010). In light of the salience of this challenge, furthermore, it would be valuable to investigate on a larger scale what the typical online student circumstances (in terms of non-study responsibilities) might look like.

### ***Curriculum***

Online student retention may be influenced by *Curriculum flexibility* and *relevance*. A lack of opportunities to progress at the desired pace may prompt online students to withdraw and seek alternative, more flexible programs (Chang et al., 2015). Students may also judge the investment required (financial and otherwise) to be excessive, where their course fails to offer clear or sufficient application to their aspirations, prompting students to withdraw (Calli et al., 2013; Chiu et al., 2007). Online students may expect and desire flexibility and relevance from their online course, furthermore, yet may be required to participate at a specified pace. Consideration of students' expectations and experiences of their curriculum, therefore, may influence online student retention.

Universities may hold primary responsibility for developing a flexible and relevant *Curriculum*. Universities may facilitate an appropriate curriculum, and increase subsequent online student retention, by providing opportunities for asynchronous collaboration; clarifying up-front any synchronous participation requirements, or accommodating students who cannot meet such requirements; enabling students to progress through their course at their desired pace; matching students to the most applicable course for their aspirations; facilitating opportunities to adapt activities to suit students' aspirations; and ensuring units within a course effectively relate to one another and are applicable to the real world. In addition, the experience of rewards and reliable technology may ultimately increase online student retention through enhanced curriculum (see also *Curriculum*, pages 289 and 296).

### ***Environment***

The present research suggests students' decisions to withdraw from their online course may be influenced by the *Environment*; specifically *online delivery* (Gleason, 2004; Hyllegard et al., 2008; Xu & Jaggars, 2011). Students may anticipate challenges in studying online; however, the quality of online delivery may be poorer than expected, and in comparison to presumed on-campus conditions. As a result, students may believe on-campus programs offer better opportunities and more positive experiences. Unanticipated experiences of poor online conditions may prompt students to explore alternative options that would enable them to participate on campus.

Universities may hold primary responsibility for ensuring a quality *Environment*. Establishing best-practice standards for online delivery, which facilitate conditions equivalent to those experienced on campus, and employing mechanisms to monitor implementation of such standards, may be beneficial. Any differences between online and on-campus delivery, and how these are to be managed, should also be articulated upfront. In addition, meaningful instructor interaction and reliable technology may enhance the conditions associated with online delivery, subsequently increasing online student retention (see also *Environment*, page 298).

### ***Academic performance outcomes***

In addition to the aforementioned *MAC-ICE* themes, online students' decisions to withdraw may be influenced by their academic performance (Cochran et al., 2014; Willging & Johnson, 2009). Where students do not achieve their desired marks, they may question whether their course is right for them, and consider withdrawing. Where students perform poorly in assessments, furthermore, they may choose to withdraw to avoid a recorded fail grade.

Academic performance, and subsequent retention, may be improved by students' efforts to actively concentrate on their studies, develop their academic skills and manage their time well. In addition, institutional support programs/services; exposure to the skills and time commitment associated with an

online course; proactive and clear advice about OE requirements, instructor availability, the degree of flexibility and differences between online and on-campus programs; considering the diversity of student skillsets upon commencement; a manageable challenge; consistent standards of instruction; clear expectations for participation in group assignments; opportunities for asynchronous participation; enabling students to progress at their desired pace; and standards for online delivery equivalent to on-campus courses, with mechanisms to monitor the implementation of such standards, may support students' success. Effective concentration, academic experience, good time management, meaningful instructor/peer interaction, flexibility, a manageable challenge, and online delivery conditions commensurate with on-campus, furthermore, may facilitate stronger academic performance, increasing online student retention (see also *Strategies to improve online student academic performance*, page 300).

### ***Satisfaction outcomes***

The present research also suggests online students' retention may be influenced by their satisfaction (Chiu et al., 2007; Lee & Choi, 2013). Where students are dissatisfied with their experience, they may withdraw from their course, potentially to pursue alternatives they feel would offer a more satisfying experience. Experiences that contribute to online student satisfaction, therefore, may subsequently influence online student retention.

Online students' satisfaction, and subsequent retention, may be supported by students and their institution. Students may facilitate enhanced satisfaction by being mindful of their capacity to concentrate and commit to their studies, and proactively planning for and purposefully addressing associated challenges; adopting clear, long-term career and learning goals; selecting courses that align well to their interests and aspirations, and in which they are confident they can succeed; and taking advantage of potential rewards associated with their studies. Universities can support student satisfaction by alerting students to concentration challenges, applicable skills and knowledge, what to do in the event of illness, available assistance, expected instructor accessibility and support, and the differences between on-campus and OE. Universities may also select students who demonstrate confidence, interest and

strong commitment to their course; while highlighting potential applications of learning activities; incorporating dynamic audio-visual and interactive tools; facilitating meaningful opportunities for peer interaction; establishing and monitoring standards for instructor interaction; challenging more advanced students, without overwhelming others; providing opportunities to adapt activities to students' interests/aspirations; and ensuring online conditions are commensurate with on-campus experiences, facilitating student satisfaction. In addition, strong commitment, concentration, self-efficacy, interest in course topics, the experience of rewards, good health, meaningful instructor/content/peer interaction, challenge, relevant learning activities, online delivery conditions commensurate with on-campus, and strong learning and academic performance; may facilitate increased online student retention, through enhanced satisfaction (see also *Strategies to improve online student satisfaction*, page 310).

### ***Strategies to improve online student retention***

In summary, the present research suggests online student retention may be improved through strategies that enhance students' motivation, ability and circumstances; alongside efforts to provide an appropriate curriculum and suitable environment; and facilitate academic performance and satisfaction outcomes. As for other online student outcomes, responsibility and capacity to increase online student retention may rest with both students and their institution. Students may enable their retention by ensuring they are committed to their course, organise their time well, and actively manage their health and simultaneous priorities. Universities may then support retention by assisting students to maintain their motivation, develop requisite skills and manage their circumstances; while providing some flexibility, a relevant curriculum, and conditions equivalent to those offered by on-campus programs.

The above experiences, and subsequent retention, may be supported through a range of strategies. When considering OE, students should be mindful of their availability and capacity to commit to their studies; and proactively plan for, and purposefully address, associated challenges. Adopting clear, long-term career and learning goals may support students' to sustain their commitment; while actively



identifying and seeking assistance to manage simultaneous responsibilities, may enable students to participate fully in their studies.

Universities can assist students to anticipate and manage these challenges, while facilitating institutional conditions conducive to retention. Providing clear, readily accessible advice of expected time commitments, what to do in the event of illness, the degree of flexibility provided, potential applications of learning activities, and differences between online and on-campus programs (reflected in application/enrolment and selection processes and promotional materials), may assist students to develop accurate expectations of OE. In addition, universities may support student retention by purposefully designing courses and associated materials for OE. Online courses should incorporate clearly demonstrated real-world application of learning activities, and opportunities for asynchronous and self-paced participation. Consideration should also be given to the diversity of skillsets upon commencement, ensuring a manageable workload for online students, and establishing standards for online delivery equivalent to on-campus courses, with mechanisms to monitor implementation of such standards. Raising awareness of applicable developmental programs, and providing tailored support, furthermore, may assist students to address challenges during their course, empowering students to persist.

### **Enhancing the total Online Student Experience**

Bringing together the aforementioned strategies to address online student outcomes, a range of opportunities are illuminated to enhance the OSE. With all identified *MAC-ICE* themes and sub-themes potentially contributing to one or more online student outcomes, and observed connections between these outcomes, it is clear all components of the *MAC-ICE* thematic structure deserve consideration. Though it is acknowledged further research is necessary to verify the role of identified (sub) themes, and demonstrate these connections for other populations, the present research offers several propositions for how students and universities might enhance the overall quality of the OSE. These propositions are summarised below.

### *Student contributions to a quality experience*

Several learner characteristics may contribute to a quality OSE. Specifically, online students' concentration; commitment; self-efficacy; interest; rewards; academic skills; time management; content familiarity; simultaneous priorities; and health, may directly contribute to their outcomes. These findings support assertions that poor online student outcomes may be associated, to some extent, with skill deficits, and/or inadequate student preparation. Strong academic skills and experience, on the other hand, may contribute to stronger performance and retention outcomes (Trekles Milligan & Buckenmeyer, 2008). Strong self-efficacy and time management may also be beneficial (Anderson, 2008). Computer literacy was not perceived to directly contribute to students' outcomes in the present research, however, as many have assumed (e.g., Tanner et al., 2009; Trekles Milligan & Buckenmeyer, 2008). Instead, students' technical skills may contribute to their organisation and self-efficacy, as well as the degree of challenge they experience, which may in turn influence online student outcomes.

The role of the learner themes in facilitating experiences conducive to a quality OSE demonstrate the importance of considering the learner in enhancing online student outcomes. The connections identified through the present research offer a number of propositions for how students may prepare and empower themselves to experience a quality OSE. Students may facilitate their own learning, performance, satisfaction and retention by ensuring they actively concentrate on their studies (avoid procrastination and manage distractions); maintain their commitment to their course; build confidence in their capacity to succeed; select courses aligned to their interests; apply their learning in meaningful ways; develop requisite academic and organisational skills, and content knowledge; and actively manage simultaneous priorities and their health.

When considering OE, therefore, students should be mindful of their capacity to concentrate and commit to their studies, their strengths and weaknesses, and availability to participate. They should proactively consider, plan for, and purposefully address associated challenges. Adopting clear, long-term career and learning goals, and selecting a course that aligns well to their interests and

aspirations, and in which they are confident they can succeed, may then support students' to sustain their motivation during an online course. Efforts to apply learning outside the course and take advantage of potential personal, intellectual, professional, and/or social/community rewards, may also help students' remain motivated throughout their first year of OE. In addition, actively identifying and seeking assistance to develop weaknesses, may empower students to participate fully in learning activities. Assertiveness and proactive effort, furthermore, may assist students to seek out and impel institutional support necessary for a high quality OSE.

Some student characteristics contributing to poor outcomes may be a function of inaccurate expectations. Where students underestimate the difficulty, required commitment, time demands and flexibility of OE, they may be less adequately prepared to commit the necessary time and effort to their studies (Hyllegard et al., 2008; Moody, 2004). OE may specifically attract students with simultaneous priorities, and who are especially time poor, furthermore, predisposing these students to problems. Ensuring promotional materials and course advice address these perceptions, therefore, may go some way towards preparing students for the realities of OE (Alexander et al., 2003; Anderson, 2008).

The present research suggests the ideal online student may be one who: concentrates well; is highly committed; is confident in their ability; is interested in course content; actively applies learning beyond their course; possesses strong academic skills; has some content familiarity; is well organised; is healthy; and has manageable non-study commitments. Selection processes and support associated with these characteristics, therefore, may ensure students are well placed to survive and thrive in OE (Alexander et al., 2003; Trekles Milligan & Buckenmeyer, 2008). Measuring these characteristics early in a course, furthermore, could enable interventions to be triggered, which could develop students in these areas and facilitate necessary support and accommodations; thereby improving students' capacity to achieve positive outcomes (Yu & Richardson, 2015). Student efforts and characteristics alone, nonetheless, may be insufficient to facilitate a quality OSE.

### ***Online course design and instruction***

In addition to considering students' suitability and preparation for OE, the present research demonstrates the significant role of the institution in facilitating a quality OSE. The findings particularly highlight the importance of good online course design and meaningful instructor interaction. The OSE may be enhanced where courses offer meaningful opportunities for students to interact with their instructors, content and peers; as well as a challenging, flexible and relevant curriculum; and comparable conditions to on-campus courses. These findings support best-practice online course design and instruction. The reported importance of flexible pace and timing of learning activities, interactive course content and feedback from instructors, reflect Simonson's (2008) description of a 'perfect' online course and several of Stone's (2017) guidelines to improve online student outcomes. The case University's quality standards for online courses similarly reflect several institutional sub-themes, including *interaction with instructors, peers and content*; and appropriate activities and assessment for *online delivery*. The findings go beyond these standards, however, suggesting the importance of a personally relevant and challenging curriculum for a quality OSE. Such elements are, nonetheless, representative of good learning design in general (Almala, 2005; Oliver & Herrington, 2002; Wilson & Lowry, 2000). Online courses that provide meaningful interaction with instructors, peers and content; facilitate a flexible, challenging and relevant curriculum; and are conducted under comparable conditions to on-campus courses, therefore, may elicit strong student outcomes.

### ***Supporting online students***

In addition to student selection criteria and online course design, a high quality OSE may be enhanced through institutional policy and support. In particular, the present research highlights the importance of accurate and accessible information about what students should expect of OE, and how they might prepare themselves to succeed. Consistent standards associated with online courses may also assist students to adjust post-entry expectations. In addition, university support services, which focus on assisting students to develop/maintain their motivation, improve academic and organisational skills, and manage their health and simultaneous commitments,

may empower students to address and mitigate impacts of potential weaknesses or barriers to effective participation. Access to such services, nonetheless, must take into account online students' circumstances, with targeted promotion of available support, and efforts to normalise help-seeking behaviour for online students.

## **Chapter summary**

The present research offers evidence that a range of expectations and experiences may contribute to a quality OSE. Effective management of student expectations, together with active consideration of each *MAC-ICE* theme, and corresponding sub-themes, may contribute to online students' learning, academic performance, satisfaction and retention. In addition, expectations and experiences that may contribute to particular online student outcomes are highlighted, signalling potential ways in which specific issues of high attrition, weak academic performance, poor learning and/or low satisfaction in OE, may be addressed through consideration of contributing *MAC-ICE* themes and outcomes.

Strong support is shown for the application of CLT in OE. The importance of peer interaction, content knowledge and relevance demonstrate CLT applies well to OE. Facilitating meaningful peer interaction, addressing students' prior understanding, and clarifying the real-world application of learning activities, therefore, may enable online students to effectively construct knowledge, and to learn deeply (Almala, 2005; Lesgold, 2004; Wang, 2009). The present research, nonetheless, clarifies the role of student circumstances and the learning environment in Constructivist learning, suggesting the sociocultural context necessary for learning may be primarily dependent upon institutional, rather than social or environmental interaction.

Identified connections between participants' expectations, experiences and outcomes, also demonstrate the importance of online students' expectations, in line with ECT (Bhattacharjee, 2001; Chiu et al., 2007). Where students' expectations are confirmed, online students may feel satisfied with their experience, and persist with their course. Extending ECT, however, the findings suggest that where instructor guidance and peripheral support assist students to adjust their expectations, and/or

adapt their practices to compensate for unexpected challenges, student satisfaction may be preserved, or even enhanced. Understanding the expectations online students bring with them, and ensuring accurate and meaningful information and support are available to clarify those expectations as early as possible, and/or adjusting practices to meet these expectations, therefore, may help mitigate the impact of inaccurate student expectations, facilitating enhanced student satisfaction.

In addition, the present research demonstrates notable consistencies with Kember's Longitudinal-process Model of Drop-out from Distance Education (1989). In particular, online students' retention may be influenced by their commitment, academic and organisational skills, circumstances, a flexible and relevant curriculum and online delivery. These factors reflect the role of student characteristics, family background, commitment and social integration, in addition to broadened student characteristics and social/work and academic environment components of Kember's model. Participants' experiences present a more complex decision-making process than proposed by Kember, however, suggesting additional roles for interest, support, instructor interaction, and a relevant and challenging curriculum, in establishing students' commitment, as well as the importance of student satisfaction for online student retention. With Kember's model insufficient to explain the lived experiences of students in the present research, a new and more comprehensive theory is needed to describe the way in which online students may decide to withdraw, and how their retention may be enhanced.

The OSE may be enhanced by adopting strategies that strengthen students' motivation; select suitable students, or support their skill development; and consider/address online students' circumstances. In addition, institutions may help facilitate a quality OSE by offering meaningful interaction with instructors, peers, and content; developing/delivering appropriate curriculum; and facilitating accessible, reliable and innovative learning environments, commensurate with on-campus conditions; with effective quality assurance mechanisms in place to monitor these aspects of the OSE. Proposed connections between online student outcomes, furthermore, demonstrates value in considering all *MAC-ICE* themes. Enhancing experiences that contribute to effective learning may subsequently improve online students' academic performance; perceived learning and strong results may then

enhance online students' satisfaction; and a satisfying experience, along with strong performance, may facilitate online student retention. Experiences that contribute to students' learning or academic performance in online courses, therefore, may have a flow-on effect for student satisfaction and retention, and these should not be overlooked.

The following chapter summarises the present research, and presents recommendations for the application and validation of its findings. Propositions are offered for how the findings may transfer to other institutions and inform development of theory, policy and practice. The chapter highlights the unique contribution to knowledge, and discusses methodological considerations in interpreting these findings and recommendations for additional investigation to advance further understanding of the OSE.

## CHAPTER 7: Summary and Conclusion

The present research described how first-year university students constructed their lived experiences of OE, and attributed meaning to these experiences. The lived experiences of online first-year university students, and perceived connections between their expectations, experiences and outcomes, were explored in the context of students first year of study at an Australian public university. The primary research question sought to describe the lived experience of OE, supplemented by two further research questions investigating students' expectations of OE, and their role in students' lived experiences of OE; and the perceived contributions of these lived experiences to online students' learning, academic performance, satisfaction and retention, during their first year of study.

This chapter summarises the present research findings, and their implications for theory, policy and practice. The findings are briefly recapped and considered in relation to current understanding of the OSE; summarising their unique contribution to knowledge. Implications for future research, and for the promotion, design and administration of a quality OE, are presented. Finally, opportunities to extend and verify these findings through further research are proposed.

### **Students' lived experiences of online education**

Through a series of interviews across their first year of study, the present research investigated the expectations and experiences of online students at an Australian public university. Three learner themes and three institutional themes described participants' lived experiences. Students held expectations, and subsequently described experiences associated with their *Motivation, Ability* and *Circumstances*, in addition to expectations and experiences of their institution, including *Interaction, Curriculum* and *Environment*. Each theme comprised several sub-themes. Together these expectations and experiences formed a *MAC-ICE* thematic structure of the OSE, revealing online students' expectations of OE, and describing how online students' subsequently experienced their first year of study. The *MAC-ICE* thematic structure demonstrates the complexity of first-year online



students' expectations and experiences, with a range of intrinsic and extrinsic elements combining to inform the total OSE.

Students' commenced their online course confident and excited about their impending journey. They were motivated and believed they had the capacity to succeed, though mindful of potential weaknesses. Students embarked on OE alongside several other priorities, including family and employment responsibilities; and expected to be supported and encouraged by family, friends, employers and their University. They anticipated an engaging and interactive experience, with a relevant, flexible and challenging curriculum, comparable conditions to presumed on-campus education, and reliable technology. Students were cautious, nonetheless, that OE could be somewhat isolating and expected they may face technical difficulties.

Upon commencing, students described a wide range of experiences. Some found their course highly engaging, interactive, flexible, challenging and relevant. Others, however, felt isolated, struggled to cope with too little or too much flexibility, found the workload overwhelming or too easy, or found content less relevant. Many cited frustrations with limited guidance, feedback and support from instructors, poor online conditions (compared with presumed on-campus equivalents), and technical difficulties. Students also struggled to maintain their motivation, and described needing to develop their academic, technical and organisational skills early in their online course. Simultaneous priorities and poor health, furthermore, limited students' capacity to engage with their studies.

Students' experiences illustrate several challenges faced by online students in their first year of study, and the significance of this transition period. Upon commencing, online students may be faced with a potentially overwhelming learning curve, as they attempt to navigate online and university learning environments; as well as personal challenges and competing priorities, alongside their studies. With the level of students' skills and experience varying considerably at commencement, this learning curve may also be more dramatic for some students, than others.

The range of expectations and experiences described by students demonstrates the complexity and diversity of students' lived experiences of OE. The *MAC-ICE* thematic structure suggests a wide range of factors, associated with both

the learner and their institution, may inform the OSE. The OSE may not simply be determined by students' innate ability or the curriculum; students' motivation and broader circumstances may also play an important role, along with meaningful interaction and their learning environment. Student experiences and associated course design, furthermore, may vary considerably across an institution, with no consistent explanation for how first-year university students might experience OE. Understanding the OSE, and evaluating associated outcomes, therefore, appears a highly complex undertaking.

### **A quality Online Student Experience**

Satisfying the third research question, the present research suggests it is possible for online students to have strong learning, academic performance, satisfaction, and retention outcomes. Where appropriate learner and institutional conditions are met, students may report a valuable and successful OSE. Poor outcomes, nonetheless, are also possible, where corresponding experiences are compromised.

A wide range of experiences were perceived to contribute to a quality OSE, with all *MAC-ICE* themes, and corresponding sub-themes, described to have influenced one or more outcomes. Students described their *concentration (Motivation)* and *content knowledge (Ability)*; together with the experience of *content* and *peer Interaction*; and a *challenging* and *relevant Curriculum*, to directly contribute to their learning. Academic performance was described to be influenced by the acquisition of this learning; together with students' *concentration (Motivation)*, *academic skills* and *organisation and time management (Ability)*; as well as the experience of *instructor* and *peer Interaction*, a *flexible* and *challenging Curriculum*, and *online delivery* conditions (*Environment*). Strong learning and academic performance; along with students' *concentration, commitment, self-efficacy, interest and passion* and *rewards (Motivation)*; *health and wellbeing (Circumstances)*; *Interaction with instructors/content/peers*; a *relevant* and *challenging Curriculum*; and *online delivery (Environment)*, were perceived to have contributed to students' overall satisfaction. Finally, retention was described to have been directly influenced by strong academic performance and satisfaction; as well as

students' *commitment (Motivation)*, *academic skills and organisation (Ability)*, and *simultaneous priorities and wellbeing (Circumstances)*; plus *Curriculum flexibility and relevance*, and *online delivery (Environment)*.

Both learner and institutional experiences may contribute to online student outcomes. Most notably, learner *Motivation*, and institutional *Curriculum* contributed to all four online student outcomes, suggesting substantial importance for these themes. *Motivational* sub-themes of *concentration* and *commitment*, and *Curriculum flexibility, challenge and relevance* were especially salient. Learner *Ability* was also perceived to have contributed to students' learning, academic performance and retention, with students' *academic skills and organisation and time management* particularly important. Learner *Circumstances* were described to have contributed to students' satisfaction and retention, with *health and wellbeing* especially important. Institutional *Interaction* was reported to have contributed to students' learning, academic performance and satisfaction, reflecting expectations and experiences of *instructor, content and peer interaction*; and the *Environment* was described to have contributed to academic performance, satisfaction and retention, with *online delivery* the principal contributor. Sub-themes of *concentration (Motivation)*, *peer Interaction*, *challenge and relevance (Curriculum)*, and *online delivery (Environment)*, were also each described to have directly contributed to three of the four outcomes, emphasising the particular significance of these specific experiences, for online student outcomes.

All *MAC-ICE* sub-themes indirectly contributed to one or more outcomes. *Instructor interaction*, in particular, directly contributed to academic performance and satisfaction, as well as 11 other experiences, many of which subsequently contributed to outcomes; suggesting this may be the single most influential sub-theme in the OSE. Similarly, *online delivery* and *peer interaction* contributed to three of the four outcomes, as well as several other sub-themes; highlighting the particular importance of facilitating equivalent online conditions to on-campus learning and the considerable value of meaningful peer connection and support. In addition, *peripheral support* and *technology* were perceived to have contributed to several other sub-themes, yet did not directly contribute to any outcomes; suggesting these experiences could be overlooked, despite potentially playing a substantial

(indirect) role in online student outcomes. The perceived contributions of these sub-themes to subsequent experiences demonstrates that each *MAC-ICE* theme may play an important role in the OSE. Overlooking one or more (sub) themes, therefore, may limit online student outcomes, and may have confounded prior research findings.

### **The importance of students' expectations**

The present research clearly demonstrates students' expectations present an important aspect of the OSE, with expectations playing a critical role in students' satisfaction and retention. In addition to identified *MAC-ICE* themes, the confirmation (or disconfirmation) of students' expectations influenced the quality of their OSE. Specifically, where students' expectations were met (confirmed), or exceeded (positive disconfirmation), they felt satisfied with their experience. This satisfaction then reinforced the perceived value in completing their online course, contributing to retention. In contrast, where students' experiences contradicted their expectations (negative disconfirmation), they felt disappointed and dissatisfied, prompting them to question the usefulness of completing their course. Where students evaluated their experience as unsatisfactory, they considered withdrawing from affected units, or their course. Support (from significant others, instructors and university support services) to overcome challenges posed by unmet expectations or unanticipated challenges, nonetheless, enabled students to adjust their expectations, and/or enhance their experiences to meet earlier expectations, resulting in feelings of pride, improved satisfaction and retention.

The findings highlight the value of expectation management, and of supporting students to overcome unanticipated challenges. Online students' expectations may vary substantially, nonetheless; and the diversity of experiences described by participants, both within and across different courses, suggests any expectation may be inaccurate for some online units, in some online courses. In the absence of consistent standards, upfront and consistent explanation of institutional interaction, curriculum and environment, and overt guidance and support to meet and manage/clarify students' expectations; online students may commence unsure of what to expect, struggle to overcome unanticipated challenges, and/or feel deprived of desired experiences, resulting in dissatisfaction and attrition.

## **Implications for theory**

The present research enables generation of several propositions, which may be further investigated, tested and refined, to form meaningful OE theory. Where students are *Motivated*, have the requisite *Ability*, are situated in *Circumstances* conducive to OE, experience meaningful *Interaction*, engage with a suitable *Curriculum*, and participate through a quality learning *Environment*, their experience may be enhanced, leading to positive outcomes. Effective learning may also improve academic performance, which may in turn facilitate a more satisfying experience. Strong academic performance and satisfaction may then reassure students' of the value in completing their online course, resulting in retention. In addition, active expectation management and support to overcome unanticipated challenges, may mitigate disappointment, strengthen students' satisfaction, and encourage online student retention.

The present research offers a uniquely holistic depiction of the OSE from the student perspective, filling several gaps in current understanding. It offers important insights, which may inform development and clarification of OE theory. In particular, the findings provide a new and multidimensional understanding of online students' expectations, which until now has been limited. Supplementing this, the rich description of students' subsequent experiences facilitates a comprehensive and deep understanding of online first-year university students' lived experiences of OE, and enables the generation of propositions for what may contribute to a quality OSE. In addition, the findings go beyond current understanding of discrete learning, performance, satisfaction and retention outcomes, articulating connections between these outcomes. These unique contributions to knowledge are summarised below.

## **An empirical evidence base**

The present research offers much needed qualitative evidence to supplement and clarify existing literature. In particular, it responds to an identified need to uncover *what* online students expect and experience (O'Shea et al., 2015; Stewart et al., 2004). It also offers the student perspective of their OSE, which has been limited in the OE literature, or disguised by researcher preconceptions, until now. Furthermore, unrestricted empirical evidence for the important role of students'

expectations in their perceptions of quality is offered, which until now has been lacking in the ECT literature (Lee, 2010). Empirical evidence is also offered to clarify anecdotal claims and confusion associated with online student outcomes, identifying which particular aspects of the OSE may strengthen or weaken outcomes. It is noted, nonetheless, a detailed understanding of what students expect and experience is also limited in the *on-campus* literature. The findings, therefore, may offer important insights, not only into what online students expect, but also for what *all* university students might anticipate for their experience.

In addition, the present research provides valuable insights into the first year experience of OE, supplementing current understanding extrapolated from the on-campus Student Experience. The findings demonstrate particular challenges associated with the first-year OSE, though an appreciation of how students' experiences may evolve over their first year, and the role of initial expectations in their lived experiences of OE. With a deeper understanding of the first-year OSE, OE theory and research involving first-year university students may be further examined, and the OE context purposefully considered.

### **Differentiating online and on-campus Student Experiences**

The diversity of perspectives, together with the range of experiences described to have contributed to online students' outcomes, show that evaluating and comparing online courses may not be straight-forward. There may be no standard model of OE, even within the same course or institution. The range of approaches to OE further challenges the generalisability of any research seeking to evaluate OE, where the associated OE model is not articulated and verified. With *online delivery* potentially a factor in several online student outcomes, furthermore, there may be important differences between online and on-campus experiences, which raise questions about the validity of studies investigating equivalence in outcomes between on-campus and OE, and industry quality standards seeking to verify such equivalence. Online students may perceive OE to require more work, greater concentration, better time management, more self-regulation, limited instructor interaction, and a heavy reliance on self-management and technology (Antonis et al., 2011; Buchan & Swann, 2007; Packham et al., 2004), compared to on-campus

education. Where such differences are not actively assessed and reported, it is feasible comparative studies have been confounded by one group experiencing a range of different (and unspecified) conditions. Inconsistencies in design/delivery of OE, therefore, may also account for some variance in reported online student outcomes in the literature. Further research is needed, nonetheless, to understand these perceived differences between online and on-campus education, and to generate genuinely equivalent experiences.

The present research has implications for how problematic online student outcomes are interpreted in comparison to on-campus education. Some notable relationships proposed by existing on-campus and self-directed OE literature were not supported in the present research, suggesting the HE OSE may be somewhat unique. For instance, online students may possess different academic skills and interests; or experience support, simultaneous priorities, instructor/content/peer interaction, flexibility and technology, differently to on-campus students. Online university students may also hold different academic skills and experience peer interaction differently to (offline) distance learners; and experience different technology, self-efficacy, rewards, and interaction to non-university online students. OE, furthermore, is not necessarily perceived as an easy option, with students mindful of the role they play in their own outcomes.

Similarities and unique differences between online and on-campus experiences have the potential to influence corresponding outcomes. OE might appear to have higher attrition, lower satisfaction, lower academic performance or poorer learning, because particular experiences contributing to these outcomes may be troublesome in OE. Where these experiences are not considered, comparisons between online HE and on-campus/non-HE programs may be confounded by fundamental differences in the corresponding Student Experience.

### **Online student learning and academic performance**

The present research suggests effective learning is possible in online courses, under certain circumstances. The reported importance of prior knowledge, peer interaction and a relevant curriculum, in particular, provides strong support for the

application of CLT to OE; with students constructing new knowledge based on prior experiences, through collaboration and application to relevant situations. Further support is offered for the particular importance of concentration, content interaction and a relevant curriculum, in facilitating perceived learning. The findings not only support a Constructivist understanding of online learning, they demonstrate existing models of OE are actively applying Constructivist pedagogy, and students recognise associated benefits for their learning. The role of interaction in CLT, nonetheless, is clarified by the present research, suggesting interaction directly related to the course is critical, while broader social support may not directly contribute to online students' perceived learning.

The present research equally demonstrates capacity for OE to result in strong academic performance, challenging research suggesting higher failure rates and lower GPAs in online courses. Under certain conditions, considering both learner and institutional aspects of the OSE, online students can perform well. In addition to reinforcing the particular importance of students' concentration, academic skills, organisation and time management, instructor interaction, peer interaction, online delivery conditions, and effective learning, new evidence is offered for the role of flexibility and challenge in facilitating academic performance. Again, no single experience, or purely student ability, may determine online students' performance; rather, a range of experiences, determined by both the learner and their institution may be important. The salient role of *online delivery*, nonetheless, suggests concerns for online/on-campus performance comparisons, with online conditions themselves potentially posing complications for performance, which on-campus students may not experience.

The different profile of experiences described to have contributed to students' learning and academic performance outcomes supports a distinction between these two constructs, rarely acknowledged in the literature. Prior research suggesting particular factors to contribute to learning or performance may have been confounded by assumptions these two outcomes were interchangeable. Studies claiming relationships to learning outcomes, for instance, may be incomplete where grades have been used as indicators of learning. This is not to say learning and performance are not connected, rather particular factors may contribute to learning,



but only indirectly influence academic performance; and particular factors unconnected to students' learning, may contribute to academic performance. Such misinterpretation may have implications for how learning and performance outcomes are evaluated; and may signal potential interference in the design of assessment seeking to measure students' learning objectively.

The salient and dramatic role of instructor interaction in the OSE, and its direct effect on academic performance (and satisfaction), must also be acknowledged. The importance of quality instruction adds further weight to prior research, demonstrating regular and meaningful contact with instructors, along with timely feedback and proactive support, may be highly valued by online students, and may play a substantial role in online student outcomes. This highlights the particular importance of considering the extent and quality of guidance, feedback and support provided by instructors in online courses, when investigating OE. Further research, which investigates the lived experience of online instructors, and seeks to understand potential barriers to their adherence to institutional standards, therefore, is essential.

### **Online student satisfaction**

The present research suggests OE can offer a satisfying experience, challenging and clarifying reports of low satisfaction in online courses. In particular, new, empirical evidence is provided of connections between online students' satisfaction and their health and wellbeing, and content interaction. Additionally, the findings reinforce the role of students' concentration, commitment, self-efficacy, interest, rewards, instructor/peer/content interaction, challenge, relevance, online delivery, learning, and academic performance, in online student satisfaction.

In addition to the above experiences, the findings suggest satisfaction may be greater where online students' expectations are met/exceeded, and vice versa, consistent with ECT. Extending ECT, however, the connection between expectation disconfirmation and dissatisfaction may be disrupted with guidance and support to overcome unanticipated challenges. Where inaccurate expectations are purposefully managed/clarified, and online students' are able to develop the necessary skills and make requisite adjustments that enable revised expectations to be met, they may feel

especially proud of their achievements, recognising they have accomplished something that was not easy. As a result, disconfirmed expectations may be effectively managed and adjusted, rectifying potential dissatisfaction. Until now, student expectations received limited attention in the OE literature, yet the present research clearly demonstrates online student expectations, and expectation management, may play an important role in online student outcomes. Furthermore, these findings suggest prior studies that have investigated online student satisfaction without examining student expectations, may have been confounded.

The present research further clarifies contradicting online student satisfaction literature. Online students may simultaneously feel disappointed with their experience, while also expressing gratitude for the opportunity to engage in HE through online delivery. This perception could present as either dissatisfaction or satisfaction, depending on the context in which students are asked, and the extent to which they are able to elaborate. A range of factors, furthermore, may contribute to students' satisfaction, beyond that of a course being delivered online, demonstrating the complexity of this construct, seldom acknowledged in the literature.

### **Online student retention**

The present research clarifies potential concerns with online student retention, particularly during the first year of study. Several participants reduced their study load, deferred, or withdrew from their online course after only one or two semesters. Though not explicitly examined, the prevalence of student attrition in the research sample supports assertions of problematic student retention in OE. Participants' experiences, nonetheless, offer valuable propositions as to why this might occur.

The findings extend literature on traditional, distance and self-directed online student retention, extrapolated to the online HE environment. In particular, the present research introduces the particular importance of commitment and flexibility in online HE student retention. The findings also bring together discrete evidence for the roles of students' organisation and time management, simultaneous priorities, wellbeing, relevance, online delivery, academic performance, and student

satisfaction in online student retention. Again, the significance of online delivery suggests there may be complications associated with the conditions faced exclusively by online students, which may influence their capacity and willingness to persist.

The findings corroborate the role of student characteristics, family background, commitment and social integration, and social/work/academic environment components of Kember's Longitudinal-process Model of Drop-out from Distance Education (1989). A more complex decision-making process is suggested than proposed by Kember's model alone, however, proposing additional roles for students' interest, support, instructor interaction, and a relevant and challenging curriculum, in establishing students' commitment; as well as the role of student satisfaction in facilitating online student retention. With Kember's model insufficient to explain the full lived experiences of students in the present research, a new and more comprehensive theory is needed to describe the way in which online students may decide to withdraw, and how online student retention may be enhanced, taking account of all contributing experiences and outcomes.

The role of student satisfaction in facilitating student retention further supports the application of ECT to OE. Where students were satisfied with their experience, as a result of having met/exceeded their expectations, or through active expectation management, they were enthusiastic to persist with their studies. Dissatisfaction, resulting from negative expectation disconfirmation, however, prompted students to consider withdrawing.

These findings highlight the complexity of the OSE, with a range of experiences, as well as other outcomes, contributing to online student retention. No one factor appears to cause online student attrition. Rather the interplay of several experiences and outcomes may inform students' decisions to persist or withdraw. This demonstrates a unique retention context associated with the OSE, reflecting differences between on-campus and online student profiles and circumstances, as well as how students may engage with their institution. The vast range of direct and indirect retention sub-themes, and observed connections between outcomes, furthermore, pose possible explanations for conflicting reports of online student retention. Where prior research has not considered and reported on each *MAC-ICE*

theme, as well as corresponding academic performance and satisfaction outcomes, important variables may have been overlooked and subsequently confounded results. A more comprehensive theory, which considers all *MAC-ICE* themes, and contributing outcomes (bringing together the above evidence and building upon Kember's (1989) model), therefore, is needed to effectively explain online student retention.

### **The *total* Online Student Experience**

The present research is the first of its kind to offer a holistic depiction of the OSE. While a plethora of research has offered empirical support for discrete connections between individual factors and particular outcomes, the present research offers a broad, unrestricted and holistic perspective of OE, demonstrating the range of expectations, experiences and outcomes that may combine to facilitate a quality OSE. It considers the total Student Experience, consistent with the broader HE sector, which has begun to focus on all aspects of the Student Experience in recognition this is crucial for student retention and satisfaction. Both academic and personal outcomes for online students were investigated; while aspects of the first-year experience that may be unique to online students were illuminated, enabling the breadth of online student experiences and outcomes to be examined together, and connections between these to be uncovered.

No one factor, or solely the learner or institution, may determine a quality OSE. Rather, the OSE may rely on a complex interplay of students' expectations, characteristics and circumstances; institutional products and support; and online student outcomes. While prior research has suggested student suitability or the curriculum to be central to online student outcomes, for instance, it has failed to consider how these components might interact. The present research suggests connections between factors and outcomes may be mediated by other factors, with complex relationships between experiences, between experiences and outcomes, and between particular online student outcomes. Students' expectations and experiences of OE may be diverse, with no single factor, or outcome likely responsible for facilitating a quality OSE. Instead, a complex interplay of expectations, experiences

and outcomes, may contribute to online students' learning, academic performance, satisfaction and retention.

This complexity has implications for how OE is understood and researched. Prior studies may have been confounded, for instance, where important themes, or contributing outcomes, have not been considered. Research focusing on particular aspects of the OSE, may overlook important factors that might affect results. The lack of comprehensive descriptions of associated OSEs in the literature, furthermore, makes it difficult to determine conditions experienced by research participants, and, therefore, to verify all potential contributions have been effectively considered. In addition, online student satisfaction research may be further confounded where students' expectations were not actively considered. OE research may be more meaningful, therefore, where associated methodology and findings consider and clarify the status of all *MAC-ICE* themes, as well as the potential role of students' expectations; allowing readers to consider the potential contribution of particular OSE characteristics and to evaluate the reliability of associated findings.

Through the proposed *MAC-ICE* thematic structure, the OSE may be further explored. This thematic structure could be applied to future research seeking to evaluate online courses, providing a checklist of themes to consider. Actively addressing and describing expectations and/or experiences of each *MAC-ICE* theme, furthermore, may help ensure researchers consider the broad spectrum of potential contributions to a quality OSE. In addition, using the *MAC-ICE* thematic matrix as a lens through which to interpret online student outcomes reported in the literature may assist readers to identify potentially confounding variables that may warrant further investigation.

Having demonstrated the range of potential contributions to online students' learning, academic performance, satisfaction and retention, current understanding of online student outcomes is extended. Where prior research has focused on particular outcomes, the present research illuminates an important connection between these outcomes, presenting a holistic understanding of quality in OE. Specifically, online student retention may ultimately be influenced by students' learning, academic performance and satisfaction; while students' satisfaction may be influenced by their

learning and academic performance; and academic performance may be influenced by students' learning. The connections between these outcomes demonstrates the importance of considering the full breadth of experiences that may inform the OSE, and caution against considering particular factors or outcomes in isolation. Online student retention research, therefore, should also consider learning/performance and satisfaction theory, if it is to consider the full breadth of potentially influential factors. This finding brings together fragmented research and theory, to form a uniquely comprehensive depiction of OE quality, which both clarifies and extends existing understanding of the OSE. Through replication and quantitative investigation, these findings may be tested, verified and clarified to establish consistent understanding of the OSE, and comprehensive theory to explain the role of student expectations, and models of OE that may maximise a quality OSE.

### **Implications for practice**

Alongside the above theoretical implications, the present research offers important opportunities to enhance OE policy and practice. The findings provide a roadmap of potential enhancements to the OSE, through consideration of identified *MAC-ICE* themes and sub-themes. These implications for policy and practice are summarised below.

#### **Online education policy**

The present research offers a new and detailed perspective of the OSE, which may inform development of applicable policy and industry standards. Satisfying demand and ensuring online courses provide a quality experience that justifies public and private investment requires an appreciation of all contributing factors. Experiences proposed to contribute to online student outcomes, therefore, may inform how quality OE might be conceptualised and measured. Where an online course teaches students something valuable, ensures a minimum standard of knowledge/skill is attained, offers a satisfying experience and encourages/enables students to persist to completion, it may be viewed more favourably by all stakeholders. As universities' primary stakeholders, students' expectations and experiences reflect important quality considerations, however, and measures that fail

to effectively consider the student perspective may present an incomplete representation of OE quality. Industry standards and measures for OE quality, therefore, may be more meaningful where they incorporate student perspectives of the total OSE.

Measuring online student outcomes may be a complex task. Student retention, for instance, may be a function of a wide range of experiences, and influenced by students' performance and satisfaction outcomes. Measures of attrition, therefore, may conceal other important issues, such as students' expectations not being met, or low academic performance. Experiences connected to the learner and their institution may contribute to each outcome, suggesting both students and universities hold some responsibility for facilitating a quality OSE. Public policy and university strategies that seek to address particular online student outcomes, and their measures of success, therefore, should consider the full range of *MAC-ICE* themes, as well as students' expectations and perceived outcomes, in order to drive meaningful and comprehensive change. Incentives to improve particular online student outcomes, furthermore, should consider the broad range of strategies that may be necessary to address corresponding expectations, experiences, and outcomes; including course promotion and selection policies, instructional design, assessment, online infrastructure, student support, and associated resourcing.

At the institutional level, the present research offers opportunities to enhance university policy and strategy, through appreciation of potential expectations, experiences and outcomes contributing to a quality OSE. Identified learner characteristics, for instance, offer a range of potential selection criteria and opportunities for meaningful course advice, which may help maximise online student outcomes. Considering students' expectations, aspirations and availability, as well as assessing prior knowledge and experience, may help place students into the most appropriate study pathways. The challenges faced by some students, furthermore, highlight the importance of normalised and accessible online student support, particularly concerning academic skills, computer literacy/technical troubleshooting, and time management, which may facilitate a more equitable learning curve and manageable first-year transition. The findings, nonetheless, suggest poor computer literacy or technical experience is not necessarily a barrier to a quality

OSE, challenging assumptions such skills are essential for OE, and critical for an engaging and enjoyable OSE. The present research's methodology reinforces this finding, with several participants voicing unfamiliarity and/or anxiety of technology, yet deeply engaged in the online interview process.

The findings also offer propositions for good online course design and delivery, which may inform development of university standards and quality assurance mechanisms. Identified institutional themes show a quality OSE may be influenced by a range of experiences of institutional *Interaction*, *Curriculum*, and the *Environment*. These experiences may inform university standards for OE. Meaningful interaction with peers and instructors, dynamic and engaging course content, and the application innovative technology, for instance, should be encouraged. Curriculum should be challenging, clearly relevant and offer some flexibility, while associated technology should be accessible and reliable. Standards of assessment and student support should also be commensurate with those provided to on-campus students, or else any differences actively articulated and mitigated; with challenges of group work within an OE environment, as well as workloads associated with substantial reading in OE, also considered.

The provision of institutional practice guidelines for instructors and course designers, nonetheless, seems insufficient to ensure consistently high standards. Participants voiced substantial disappointment and frustration with the quality of instruction, peer interaction, and online conditions experienced. These concerns might have been addressed, had their units adhered to the case University's guidelines. Employing active quality assurance mechanisms, therefore, may also be needed to facilitate optimal conditions for online student outcomes, allowing universities to manage/meet students' expectations and ensure a consistently high quality OSE.

Instructor interaction, more than any other factor, was identified to contribute to a quality OSE. This challenges perceptions that OE may be a cheaper or easier alternative for institutions. Universities cannot expect to passively offer OE with little or no regular input from academic staff, and still achieve strong outcomes. Self-regulation may compensate for poor instructor interaction to an extent; however,



such skills may be in short supply for first-year students with little experience of HE. The provision of meaningful instructor interaction may also present an important difference between online HE and readily available self-directed courses, such as MOOCs. Reports of low instructor attitudes and beliefs towards OE in the literature; alongside prevalent reports of limited and low quality instruction from participants in the present research, nonetheless, present a worrisome challenge. If universities must invest in addressing one factor alone, it should be in online instruction.

With instructor interaction of specific importance in online student outcomes and contributing experiences, support is shown for the value of associated training and development opportunities. Professional development strategies, together with the availability of instructional design and technical support, may enable universities to deliver online courses that result in enhanced outcomes, by empowering instructors to facilitate a reliable, engaging, meaningful and innovative OSE.

The diversity of perspectives, and range of experiences described to contribute to student outcomes, nonetheless, show there is no standard model of OE, even within the same course or institution. The variety of OE approaches again has substantial implications for how one conceptualises a quality online course. Where institutions offer inconsistent standards across their courses, it may be difficult to set, clarify and meet online students' expectations; let alone those of industry, community or government stakeholders. In particular, inconsistencies between the flexibility offered in some units and how OE is promoted, may cause substantial frustration and difficulties for online first-year students. The establishment of a standard structure for online units, or else a means of clearly articulating the degree of flexibility offered by units prior to enrolment, therefore, may be helpful.

The findings do not offer strong support for the cost-saving potential of online delivery. Students may be dissatisfied with the value for money offered by OE, and the potential for weaker outcomes may subsequently cost institutions heavily in lost revenue. Where the OSE is enhanced, however, it is feasible savings could be made over the longer term, through technical innovation and reduced reliance on physical infrastructure. Such savings, nonetheless, may need to be considered across the HE sector, if one considers Ernst & Young's (2012)

predictions of a changing HE climate; and increased investment appears nonetheless essential in the short-term, if universities are to achieve a quality OSE.

The findings further offer valuable understanding of the total Student Experience, which may inform how universities adapt to evolving HE trends. A greater understanding of why students may enrol in online courses, and what they might expect of OE, is offered. Understanding student expectations, and motivations, will enable universities to ensure their products/services meet the needs of intended consumers, and aid in articulating the unique benefits and value offered by HE, compared to other educational opportunities. Understanding what students want and need may also enable universities to enhance the quality of their offerings, and aid in building reputation, which may subsequently position universities more competitively on a global stage.

Finally, the present research highlights where universities might get their best return on investment, empowering institutions to invest efficiently to enhance the OSE. Understanding what makes a difference to the OSE, and how, may also enable universities to unbundle their services. Where institutional capacity to facilitate particular experiences at high quality may be limited, for instance, universities may choose to offer associated services in partnership with more advanced organisations/providers.

### **Enhancing the Online Student Experience**

Beyond the theoretical and policy implications above, the present research offers valuable insights that may be applicable to similar OE contexts. The findings offer important indications of what online students may expect and experience of OE, and how these expectations/experiences might contribute to online student outcomes. Where similar expectations or experiences are reported at other institutions, it is feasible these may also contribute to corresponding student outcomes. Challenges faced by participants, may also be experienced by other online students. The findings, therefore, offer several practical implications for the promotion, design and administration of OE, and in addressing what may contribute to student outcomes in associated programs.

The findings demonstrate roles for both students and universities in facilitating a quality OSE. It is insufficient to say students must be suitable and prepared; institutions must also ensure they facilitate a quality experience for online students. Likewise, a strong curriculum alone will not make for a quality OSE. Students must also be willing to commit and actively concentrate on their studies. To focus on any one component of the OSE, or either the learner or institution, therefore, may risk overlooking other important contributions. Intensely focusing on online students' preparation/suitability, the curriculum, technology, support, or particular outcomes in isolation, may neglect important factors contributing to a quality OSE. Judging the value of particular strategies, such as a developmental program, or the addition of learning technologies on particular online student outcomes, furthermore, may be clouded by a lack of attention to potentially confounding experiences, and/or indirect connections between corresponding experiences and outcomes. A program may be highly effective in improving online students' academic skills, for instance, yet its impact on subsequent performance may be overshadowed by concurrently poor instruction. Such a program might subsequently be assumed ineffective, despite having achieved success, while other, potentially more significant issues, may continue to limit a quality OSE. A holistic approach to interpreting and enhancing quality, therefore, is essential. Piecemeal strategies may fix things for some online students, but may overlook or disguise other important issues, and may not make a substantial difference to overall quality of the OSE.

The present research suggests strong online student learning, academic performance, satisfaction and retention outcomes are possible. Such a finding challenges prevalent assumptions that OE offers a lower quality experience than on-campus education. Beyond this 'possibility', furthermore, particular conditions have been identified, associated with both learners and their institution, which may contribute to online student outcomes. In this way, the present research offers a thematic matrix of interconnected experiences, which may be considered and addressed to facilitate a high quality OSE.

The findings offer several propositions as to how universities might address potential contributions to specific online student outcomes. Where an institution

seeks to improve online students' learning or performance, for instance, considering contributing *MAC-ICE* themes may illuminate opportunities to strengthen particular aspects of their practice, or inspire alternative approaches. Online student dissatisfaction or attrition, furthermore, may be examined through active assessment and management of students' expectations, as well as consideration of all *MAC-ICE* themes and students' learning and performance outcomes.

The present research suggests both learners and their institution may contribute to a quality OSE. This recognises there are some factors, which may be outside the institution's control. Online students' intrinsic motivation, in particular, may be important in facilitating all online student outcomes, while students' ability may contribute to their learning, performance and retention. Online students' circumstances may also be important, contributing to their satisfaction and retention. These experiences are largely determined by the learner, and rely heavily on students' own intentions and efforts, as well as others beyond the university. Universities may play a role, nonetheless, in encouraging, inspiring and supporting students to strengthen their motivation and ability, and to establish circumstances conducive to a quality OSE. Conveying the importance of associated issues to prospective and commencing students; and alerting them to the likely time commitment, may help students prepare and set accurate expectations, which enable them to succeed and value their experience. Articulating the requisite skillset and standards expected of students, and connecting these to available preparatory programs and support services, furthermore, may empower students to accurately assess their ability, and actively develop requisite skills prior to (or early in) their online course.

The present research further demonstrates the importance of students' expectations, and expectation management. Specifically, the accuracy of students' expectations may inform their satisfaction and retention. Course promotion and advice may play an important role in helping students set accurate expectations. The suggested benefits of OE, often highlighted in marketing messages, in reality may pose substantial challenges for online students, and may be misleading in some situations. It is important, therefore, for promotional messages and course advice to accurately convey and clarify the degree of flexibility and expected commitments, in

order for online students to set realistic expectations and anticipate/manage these challenges. The impact of inaccurate expectations, nonetheless, may be mitigated by clear and accessible information, and instructor guidance, early in students' courses. Inaccurate expectations, furthermore, may not necessarily indicate inadequate preparation or academic failure. Student expectations may be accurate and appropriate, yet their experience may not live up to desired standards, demonstrating the importance of institutions actively considering student expectations in the design of OE.

Identified institutional themes may be especially relevant to university practice. The curriculum, in particular, may be important for all online student outcomes; while interaction facilitated by the institution, especially guidance, feedback and support from instructors, may contribute to online students' learning, academic performance and satisfaction. The environment, particularly the conditions associated with online delivery, may also contribute to online students' performance, satisfaction and retention. These experiences are clearly within the remit of university personnel.

Course design and delivery may contribute substantially to online student outcomes. Instructors who are accessible and responsive; provide opportunities for meaningful interaction with peers; use a variety of dynamic materials and strategies to engage students in learning activities; and encourage the application of learning beyond the course, may facilitate a quality OSE. Consideration should be given to online students' circumstances in the design of curriculum, with alternative strategies available where students are unable to participate in synchronous activities. Facilitating a relevant and challenging curriculum for each student, which also enables students to participate in flexible ways, with consideration to potential simultaneous priorities, furthermore, may enhance online student outcomes. The importance of interaction, dynamic content, and clear relevance further supports innovative approaches, such as flipped classrooms, which make the most of limited opportunities for interaction, to support knowledge construction.

Flexibility may also be valued by online students, and especially helpful in managing simultaneous priorities. For some, however, flexibility may leave them

lost or disengaged. Unexpected limits to such flexibility, furthermore, may jeopardise online students' experiences and outcomes. A delicate balance of flexibility, which takes into account online students' circumstances and need for regular contact, and at minimum a clear explanation of how much flexibility students should expect, prior to enrolling, therefore, may be needed. OE should be flexible enough to meet individual student needs, motivations and situations; while also upholding academic integrity and assisting students to make the most of learning opportunities.

In addition, facilitating equivalent conditions to on-campus students, and/or clarifying upfront and actively mitigating any specific differences faced by online students (as distinct from their on-campus peers); and ensuring technology is reliable and applied in innovative ways, may enable online students to access and participate in their studies; enhancing their performance, satisfaction and retention. Technology may facilitate students' engagement and participation (or prevent it), and determine access to what is important. Technical difficulties, however, can stop OE in its tracks, and cause significant frustration and stress. The application of technology, furthermore, is limited by instructors' capability to use it.

Technology, nonetheless, while important for the OSE, may play a more indirect role in facilitating online student outcomes. The present research did not identify any direct connections between technology and online student outcomes. Reliable technology may instead help to facilitate online students' organisation, self-regulation, mobility, flexibility and online participation, while technical difficulties may increase students' stress and anxiety. These experiences may subsequently contribute to students' academic performance, satisfaction and retention. Technology, therefore, may form an important component of a quality OSE, yet cannot be considered in isolation. Perceived differences between participants' experiences and their understanding of the on-campus Student Experience, and the particular challenges identified for online delivery, furthermore, highlight the danger in focusing solely on the role of technology when comparing on-campus and online programs. These findings, nevertheless, offer greater understanding of how technology may enhance, or restrict students' experiences. With the line between online and on-campus education continuing to blur, this knowledge may further

enable universities to consider how they use technology in *all* learning environments.

Similarly, support alone may be insufficient to address high attrition in OE. Students' decisions to withdraw or persist may be complex, informed by a wide range of experiences and outcomes. All aspects of the OSE may play a role in student retention, including those associated with both the learner and institutions, as well as students' academic performance and satisfaction; demanding a broad and comprehensive approach to addressing problems of high attrition in online courses. Support, which considers online students' particular needs and circumstances, nonetheless, may play an important role in facilitating a quality OSE through its contribution to students' concentration, commitment, interest, academic skills, computer literacy, organisation and management of simultaneous priorities. Raising awareness of such support and actively encouraging online students to access available services, furthermore, may assist students to address weaknesses and situational challenges, supporting a positive OSE.

While the present research offers significant opportunities to enhance the OSE, the findings may also inform understanding of a quality *on-campus* Student Experience. It is feasible many of the challenges faced by students in the present study are also faced by some on-campus students, though these may be more salient for online students. With student populations increasingly diverse, many on-campus students may face similar challenges, such as the need to manage simultaneous work or family priorities. The importance of digital literacy, alongside institutional needs to reduce costs, may also see more on-campus students interacting with learning technology. It is feasible the application of such technology in on-campus courses may have similar effects on the Student Experience, to those seen in OE. Though further research is needed, many of the opportunities to enhance the OSE highlighted herein, may be equally valuable to consider for on-campus programs.

Overall, the present research demonstrates university personnel play an important role in facilitating a quality OSE. University administrators should set clear standards and ensure accountability for adhering to best-practice online course design and delivery. Unit and course coordinators should consider all *MAC-ICE*

themes, especially the flexibility, challenge and relevance offered by curriculum, in developing units/courses for online delivery, with support from learning designers and technical staff to implement and manage innovative learning tools and technology. Instructors may also enhance the OSE by offering regular guidance, feedback and support; and encouraging students to interact in meaningful ways. In addition, university advisors and support services should provide clear information on what OE entails, promote and normalise assistance available to online students, and attempt to facilitate equivalent support out-of-hours and/or locally for students who cannot attend campus.

### **Methodological considerations, and opportunities for further research**

In interpreting the implications of the present research, it is important to consider potential limitations for the generalisation of its findings. As a case study, the findings represent experiences of 43 online first-year students at the case University. Though the sample size and methodology prevent direct generalisation of these findings, a deep and thorough description of the OSE is offered, which may inform and clarify OE theory, policy and practice.

Purposeful sampling enabled selection of participants who were representative of the online first-year student population at the case University, providing external validity (transferability) of the findings. It is feasible, nonetheless, the expectations/experiences of online students at other institutions may be different. Likewise, pre-tertiary, later-year undergraduate and postgraduate students may hold different expectations and experiences of OE. The findings cannot be generalised, therefore, to all students at the case University, or to online first-year students at other institutions; but may give rise to explanations that could apply to other cases, and may be transferable to similar contexts. Consistencies between participants' experiences, and those reported in similar qualitative studies, furthermore, implies the participant sample is, to some extent, characteristic of the broader online student population.

One must also acknowledge the qualitative nature of the present research, and as such, the possibility of researcher influence. As a fellow student relying on the



same processes and infrastructure as many of the participants, it cannot be said categorically that the researcher's perspective could not have informed the interpretation of participants' words or identification of salient themes, in any way. Researcher influence was actively minimised, nonetheless, through the use of bracketing techniques, which identified and removed researcher perspectives from analysis, along with participant validation of researcher interpretations during interviews, establishing research credibility and conformability. The researcher's familiarity with the case University and online environment was also beneficial in many ways, particularly when organising and managing interviews. Likewise, having the same interviewer for all interviews enabled establishment of strong rapport with participants, and ensured consistency of process for all participants.

The qualitative methodology was central to the research purpose, and elicited richly informative data. The ability to have a conversation, unrestricted by predetermined closed questions, enabled online students to be the primary focus of the research, with students' own perceptions driving the direction and depth of each interview. The application of qualitative methodology also enabled the development of propositions, which may explain some variance in prior research outcomes, and will facilitate generation of meaningful hypotheses about the OSE.

The present research focused explicitly on the online student perspective. As such, it must be acknowledged the findings reflect *students'* lived experiences, which may differ from others' experiences of OE. Online instructors and university administrators, for instance, may have different expectations and experiences of facilitating OE. The importance of these additional perspectives should not be diminished; and further research investigating others' lived experiences of OE is essential to supplement these findings.

With all interviews conducted online, and participants recruited via online advertisement and email, it is possible the online research methods could have resulted in some sampling bias. These online strategies may have limited the sample, with students who were less active, proficient or comfortable in the online environment potentially less likely to participate. Several participants expressed anxiety for technology, however, suggesting less technically proficient students were

not necessarily deterred from participating. These participants explicitly assured their comfort, and even enjoyment of the online interviews, furthermore, demonstrating the interview technique itself was effective for less computer-literate participants.

The richness of information elicited from the interviews, and participants' willingness to speak openly and extensively through synchronous chat further validates potential benefits and effectiveness of online interviewing as a data collection method. It must be acknowledged, nonetheless, that technical issues and lost connections frequently interrupted interviews. In such cases, the provision of the interviewer's contact phone number and email, as well as explicit instructions for what to do if difficulties occurred (set out in the interview confirmation and at the commencement of each interview), were sufficient to avoid lost rapport with participants, helped to manage technical anxiety, and ensured participants had sufficient opportunities to provide their full perspective.

Further research is essential to test and clarify the propositions arising from the present research. Replication of the research methodology at other Australian and International universities would enable validation of these findings for other online first-year student populations. A larger scale quantitative study, furthermore, is needed to assess the prevalence of expectations and experiences described herein, and to determine their effects on corresponding outcomes. In addition, application of the *MAC-ICE* thematic structure to OE research, and the design or evaluation of online programs, would enable validation of identified themes in investigating, understanding and interpreting online students' expectations, experiences and outcomes; and identify any variance explained by confounding factors in prior studies.

In addition to validating the findings for the broader population, further research would be valuable to uncover additional perspectives of OE. In particular, as a key stakeholder in the OSE, it is important to understand and appreciate the lived experience of instructors engaged in online teaching. International students also represent an important market for OE, and it would be useful to know how their experience might differ from domestic online students. The importance of *Motivation* and *Ability* themes, along with evidence of students' development across

their first year, furthermore, suggest some challenges associated with OE may diminish with experience. Replicating the present research with instructors, international students, and later-year undergraduate/postgraduate students, therefore, would offer important information to supplement the findings. Likewise, investigation of students' expectations and experiences when undertaking online preparatory or enabling programs, and how these might compare to first-year undergraduate students, would be informative.

### **Concluding comments**

The present research offers a deep description of students' lived experiences of their first year in OE, illustrating in detail what online students may expect; how they may experience OE; and how particular expectations and/or experiences may contribute to online student outcomes. The findings tell a story of a group of university students, across a range of courses and demographics, who embarked on online courses for the first time. Through rich description, the *MAC-ICE* thematic structure was developed, presenting key themes and sub-themes that may guide further investigation of OE, alongside a thematic matrix illuminating the range of experiences that may contribute to a quality OSE. Six themes described students' lived experience of OE: learner *Motivation, Ability* and *Circumstances*; and institutional *Interaction, Curriculum* and *Environment*. Discrete expectations and experiences formed sub-themes corresponding to each of these themes, with each sub-theme perceived to play a role in a quality OSE, either directly contributing to online students' outcomes, or facilitating corresponding experiences. Across these themes, connections between students' expectations and experiences were also shown to be important in determining online students' satisfaction, and subsequently informing their decisions to persist, or otherwise.

The findings suggest online students may hold expectations for, and experience OE through their motivation, ability and circumstances; together with the interaction, curriculum and environment facilitated by their institution. These expectations and experiences may subsequently contribute to online students' learning, academic performance, satisfaction and retention. Where students are deeply motivated; possess the necessary skills to participate effectively in online and

university level education; are situated in circumstances conducive to learning engagement; and are well informed about what OE may entail, they may be well placed for a positive and successful OSE. Supplementing this, universities may ensure a quality OSE by facilitating meaningful student interaction with instructors, peers and course content; providing curricula that offer students some flexibility, challenge but do not overwhelm students, and demonstrate clear application to students' aspirations; and delivering OE within a reliable and innovative online learning environment that offers a commensurate experience to on-campus education. Online students' academic performance may also be strengthened by the achievement of effective learning; and their satisfaction improved as a result of learning, strong performance and active management of student expectations. Online student retention, furthermore, may rest on all *MAC-ICE* themes, in addition to strong academic performance and satisfaction. Evaluating and enhancing the OSE, therefore, may require consideration of all *MAC-ICE* themes, student expectations, and contributing outcomes, with each expectation, experience and outcome having the potential to strengthen or jeopardise subsequent experiences, and the perceived quality of the OSE. Consequently, research, policy and practice seeking to improve the OSE, must actively consider and address each of these elements, to achieve meaningful and effective results.

The richness of information provided through the present research enables the generation of propositions about students' expectations and experiences of OE, and suggests opportunities to enhance the OSE through consideration of learner and institutional themes, and management of student expectations. It contributes new knowledge to the field of OE, providing a comprehensive description of the OSE, which until now has been fragmented and incomplete. The resultant *MAC-ICE* thematic structure and matrix offer means through which prior research may be further scrutinised, and the OSE thoroughly examined, enabling researchers, policy-makers and universities alike, to identify, investigate and implement strategies that may ensure a quality OSE.

## References

- Adams, T., Banks, M., Davis, D., & Dickson, J. (2010). *The Hobsons retention project: Context and factor analysis report*. Retrieved from [http://aiec.idp.com/uploads/pdf/2010\\_AdamsBanksDaviesDickson\\_Wed\\_1100\\_BGallB\\_Paper.pdf](http://aiec.idp.com/uploads/pdf/2010_AdamsBanksDaviesDickson_Wed_1100_BGallB_Paper.pdf)
- Alexander, J. W., Polyakova-Norwood, V., Johnston, L. W., Christensen, P., & Loquist, R. S. (2003). Collaborative Development and Evaluation of an Online Nursing Course. *Distance Education*, 24(1), 41-56. doi:10.1080/01587910303046
- Ali, N., Hodson-Carlton, K., & Ryan, M. (2004). Students' Perceptions of Online Learning: Implications for Teaching. *Nurse Educator*, 29(3), 111-115.
- Allen, I. E., & Seaman, J. (2007). *Online Nation: Five Years of Growth in Online Learning*. Sloan Consortium. Retrieved from [http://www.sloanconsortium.org/publications/survey/online\\_nation](http://www.sloanconsortium.org/publications/survey/online_nation)
- Allen, I. E., & Seaman, J. (2011). *Going the Distance: Online Education in the United States*. United States of America: BABSON Survey Research Group
- Allen, I. E., & Seaman, J. (2014). *Grade Change: Tracking Online Education in the United States*. United States of America: Babson Survey Research Group. Retrieved from <http://www.onlinelearningsurvey.com/reports/gradechange.pdf>
- Allen, I. E., Seaman, J., Poulin, R., & Taylor Straut, T. (2016). *Online Report Card: Tracking Online Education in the United States*.
- Allen, M., Mabry, E., Mattrey, M., Bourhis, J., Titsworth, S., & Burrell, N. (2004). Evaluating the Effectiveness of Distance Learning: A Comparison Using Meta-Analysis. *Journal of Communication*, 54(3), 402-420.
- Almala, A. H. (2005). A Constructivist Conceptual Framework for a Quality e-Learning Environment. *Distance Learning*, 2(5), 9-12.
- Anderson, T. J. (2008). Conquering the Fear of Online: Advising Students to Successful Online Course Taking. *Distance Learning*, 5(4), 73-77.
- Andrew, S., Salamonson, Y., Weaver, R., Smith, A., O'Reilly, R., & Taylor, C. (2008). Hate the course or hate to go: Semester differences in first year nursing attrition. *Nurse Education Today*, 28, 865-872. doi:10.1016/j.nedt.2007.12.007
- Antonio, A., & Tuffley, D. (2015). First year university student engagement using digital curation and career goal setting. *Research in Learning Technology*, 23. Retrieved from <http://www.researchinlearningtechnology.net/index.php/rlt/article/view/28337> doi:10.3402/rlt.v23.28337
- Antonis, K., Daradoumis, T., Papadakis, S., & Simos, C. (2011). Evaluation of the effectiveness of a web-based learning design for adult computer science courses. *IEEE Transactions on Education*, 54(3), 374-380.
- Artino, A. R. J., & Stephens, J. M. (2009). Academic motivation and self-regulation: A comparative analysis of undergraduate and graduate students learning online. *Internet and Higher Education*, 12, 146-151.
- Ashcraft, M. H., & Krause, J. A. (2007). Working memory, math performance, and math anxiety. *Psychonomic Bulletin and Review*, 14(2), 243-248.

- Assiter, A., & Gibbs, G. R. (2007). Teaching and Training: student retention and motivation. *European Political Science*, 6, 79-93.
- Association of Public and Land-grant Universities. (2009). *Online Learning as a Strategic Asset. Volume II: The Paradox of Faculty Voices: Views and Experiences with Online Learning*. ALPU-Sloan National Commission on Online Learning.
- Athabasca University. (2016). Online and Distance Education. Retrieved from <http://www.athabascau.ca/discover/online-distance-education/>
- Australian Bureau of Statistics. (2016). *8146.0 Household Use of Information Technology, Australia, 2014-15*. Retrieved from <http://www.abs.gov.au/ausstats/abs@.nsf/mf/8146.0>.
- Australian Government. (2010). *Selected Higher Education Statistics - 2010 Student Data*. Retrieved from <http://education.gov.au/selected-higher-education-statistics-2010-student-data>.
- Australian Government. (2011). *Higher Education Standards Framework*. Canberra, Australia: Department of Industry, Innovation, Science, Research and Tertiary Education. Retrieved from [https://www.legislation.gov.au/Details/F2012l00003/Html/Text#\\_Toc311791709](https://www.legislation.gov.au/Details/F2012l00003/Html/Text#_Toc311791709).
- Australian Government. (2015). *Selected Higher Education Statistics - 2015 Student data*. Canberra, Australia: Department of Education and Training. Retrieved from <http://education.gov.au/selected-higher-education-statistics-2015-student-data>.
- Australian Government. (2017a). *Completion Rates of Higher Education Students - Cohort Analysis, 2005-2014*. Retrieved from <https://docs.education.gov.au/documents/completion-rates-higher-education-students-cohort-analysis-2005-2014>.
- Australian Government. (2017b). Tertiary Education Quality and Standards Agency. Retrieved from <http://www.teqsa.gov.au>
- Ayling, R., & Mewse, A. J. (2009). Evaluating Internet Interviews with Gay Men. *Qualitative Health Research*, 19(4), 566-576.
- Bandura, A. (1997). Insights. Self-efficacy. *Harvard Mental Health Letter*, 13(9), 4-6.
- Barber, J. (2012). Educational Technologies and the Changing Role of Universities *Ockham's Razor*: ABC Radio National.
- Barnacle, R. (2001). *Phenomenology*. Retrieved from <http://0-search.informit.com.au.library.ecu.edu.au/documentSummary;dn=018334250931234;res=IELHSS>
- Barron, P., & D'Annunzio-Green, N. (2009). A smooth transition? Education and social expectations of direct entry students. *Active Learning in Higher Education*, 10(1), 7-25.
- Baxter, P., & Jack, S. (2008). Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers. *The Qualitative Report*, 13(4), 544-559.
- Beard, L. A., & Harper, C. (2002). Student Perceptions of Online Versus on Campus Instruction. *Education*, 122(4), 658-663.
- Benckendorff, P., Ruhanen, L., & Scott, N. (2009). Deconstructing the Student Experience: A Conceptual Framework. *Journal of Hospitality and Tourism Management*, 16, 84-93. doi:10.1375/jhtm.16.1.84

- Benson, R., Hewitt, L., Heagney, M., Devos, A., & Crosling, G. (2010). Diverse pathways into higher education: Using students' stories to identify transformative experiences. *Australian Journal of Adult Learning*, 50(1), 26-53.
- Bergin, A., & Pakenham, K. (2015). Law Student Stress: Relationships Between Academic Demands, Social Isolation, Career Pressure, Study/Life Imbalance and Adjustment Outcomes in Law Students. *Psychiatry, Psychology and Law*, 22(3), 388-406. doi:10.1080/13218719.2014.290026
- Bhattacharjee, A. (2001). Understanding Information Systems Continuance: An Expectation-Confirmation Model. *MIS Quarterly*, 25(3), 351-370.
- Bolliger, D., & Erichsen, E. (2013). Student Satisfaction with Blended and Online Courses Based on Personality Type. *Canadian Journal of Learning and Technology*, 39(1), 1-23.
- Boud, D. (2010). *Assessment 2020: Seven propositions for assessment reform in higher education*. Australian Learning and Teaching Council. Retrieved from <https://www.uts.edu.au/research-and-teaching/learning-and-teaching/assessment-futures/overview>
- Bradford, G. R. (2011). A relationship study of student satisfaction with learning online and cognitive load: Initial results. *Internet and Higher Education*, 14, 217-226. doi:10.1016/j.iheduc.2011.05.001
- Bradley, D., Noonan, P., Nugent, H., & Scales, B. (2008). *Review of Australian Higher Education: final report*. Canberra, Australia: Department of Education, Employment and Workplace Relations.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. doi:10.1191/1478088706qp063oa
- Breen, L., Cohen, L., & Chang, P. (2003, February). *Teaching and learning online for the first time: Student and coordinator perspectives*. Paper presented at the Partners in Learning: 12th Annual Teaching Learning Forum, Edith Cowan University, Perth.
- Brinkworth, R., McCann, B., Matthews, C., & Nordstrom, K. (2009). First year expectations and experiences: student and teacher perspectives. *Higher Education*, 58, 157-173. doi:10.1007/s10734-008-9188-3
- Brooks, M. (2009, May 29). The Excellent Inevitability of Online Courses. *The Chronicle of Higher Education*. Retrieved from <http://chronicle.com/article/The-Excellent-Inevitability-of/44251/>
- Buchan, J. F., & Swann, M. (2007). A Bridge too Far or a Bridge to the Future? A case study in online assessment at Charles Sturt University. *Australasian Journal of Educational Technology*, 23(3), 408-434.
- Buckley, M. R., Novicevic, M. M., Halbesleben, J. R. B., & Harvey, M. (2004). Course management and students' expectations: theory-based considerations. *The International Journal of Educational Management*, 18(2), 138-144. doi:10.1108/09513540410522261
- Calder, A., & Menzies, V. (2011, June). *Online early childhood education mentoring: Peer support strategies for success*. Paper presented at the 14th Pacific Rim FYHE Conference, Fremantle, WA.
- Calli, L., Balcikanli, C., Calli, F., Cebeci, H., & Seymen, O. (2013). Identifying Factors that Contribute to the Satisfaction of Students in E-Learning. *Turkish Online Journal of Distance Education*, 14(1), 85-101.

- Carr, S. (2000, February 11). As Distance Education Comes of Age, the Challenge Is Keeping the Students. *The Chronicle of Higher Education*, pp. A39-A41.
- Case, D. E., & Davidson, R. C. (2011). Accessible Online Learning. *New Directions for Student Services*, 134, 47-58.
- Case University. (2009). *2009 Pocket Statistics*.
- Case University. (2012). *2012 Pocket Statistics Guide*.
- Case University. (2014a). [Case University] *Quality Assurance Guidelines for Online Delivery*. Western Australia: Case University.
- Case University. (2014b). Study Online. [Case University website].
- Case University. (2015a). About [Case University]. [Case University website]
- Case University. (2015b). *Pocket Stats 2015*.
- Case University. (2016). Study Online. [Case University website]
- Cavanaugh, J. K., & Jacquemin, S. J. (2015). A Large Scale Comparison of Grade Based Student Learning Outcomes in Online vs. Face-to-Face Courses. *Journal of Asynchronous Learning Networks*, 19(2). Retrieved from <http://files.eric.ed.gov/fulltext/EJ1062940.pdf>
- Chamberlain, B. (2009). Phenomenology: A Qualitative Method. *Clinical Nurse Specialist*, 23(2), 52-53.
- Chang, C., Liang, L., Shu, K., & Chiu, Y. (2015). Alteration of Influencing Factors of e-Learning Continued Intention for Different Degrees of Online Participation. *International Review of Research in Open and Distributed Learning*, 16(4), 33-61.
- Charles Sturt University. (2016). CSU Online. Retrieved from <http://futurestudents.csu.edu.au/csu-online?gclid=COaz676o9c8CFQsJvAodIYQOgQ>
- Chen, C., Jones, K. T., & Moreland, K. (2017). How online learning compares to the traditional classroom: measuring accounting course outcomes. *The CPA Journal*, 87(9), 44-50.
- Chen, K., & Jang, S. (2010). Motivation in online learning: Testing a model of self-determination theory. *Computers in Human Behavior*, 26, 741-752. doi:10.1016/j.chb.2010.01.011
- Cherry, B., Ordonez, L. D., & Guilliland, S. W. (2003). The Effects of Expectations on Fairness and Satisfaction Perceptions. *Journal of Behavioral Decision Making*, 16, 375-395. doi:10.1102/bdm.452
- Chiu, C., Hsu, M., Sun, S., Lin, T., & Sun, P. (2005). Usability, quality, value and e-learning continuance decisions. *Computers & Education*, 45, 399-416.
- Chiu, C., Sun, S., Sun, P., & Ju, T. L. (2007). An empirical analysis of the antecedents of web-based learning continuance. *Computers and Education*, 49, 1224-1245.
- Cho, V., Cheng, T. C. E., & Lai, J. W. M. (2009). The role of perceived user-interface design in continued usage intention of self-paced e-learning tools. *Computers and Education*, 53, 216-227.
- Christie, H., Tett, L., Cree, V. E., Hounsell, J., & McCune, V. (2008). 'A real rollercoaster of confidence and emotions': learning to be a university student. *Studies in Higher Education*, 33(5), 567-581. doi:10.1080/03075070802373040
- Ciampa, K. (2014). Learning in a Mobile Age: An Investigation of Student Motivation. *Journal of Computer Assisted Learning*, 30, 82-96.



- Clarebout, G., & Elen, J. (2008). Advice on Tool Use in Open Learning Environments. *Journal of Educational Multimedia and Hypermedia*, 17(1), 81-98.
- Clark-Ibanez, M., & Scott, L. (2008). Learning to Teach Online. *Teaching Sociology*, 36(1), 34-41.
- Clark, J. (2007). Retention: A Selected Critical Inventory of Best Practices. Retrieved from <http://www.csus.edu/oir/retention%20and%20graduation/retention%20and%20graduation%20initiatives/retention%20task%20force/critical%20inventory.pdf>
- Clinefelter, D. L., & Aslanian, C. B. (2015). *Online college students 2015: Comprehensive data on demands and preferences*. Louisville, KY: The Learning House, Inc. Retrieved from [www.learninghouse.com/OSC2015](http://www.learninghouse.com/OSC2015)
- Cluett, L., & Skene, J. (2011, June). *Trends and outcomes from five years of surveying first year university students about ICT and social media at an Australian university*. Paper presented at the 14th Pacific Rim FYHE Conference, Fremantle, WA.
- Cochran, J. D., Campbell, S. M., Baker, H. M., & Leeds, E. M. (2014). The Role of Student Characteristics in Predicting Retention in Online Courses. *Research in Higher Education*, 55, 27-48.
- Cohen, L., Harman, B., Lauva, M., Rassau, A., Brown, J., & Crevacore, C. (2011, June). *Mentoring matters: Embedding peer support frameworks into first year undergraduate programs*. Paper presented at the 14th Pacific Rim FYHE Conference 2011, Fremantle, WA.
- Colclough, G., Kimmins, L., Harmes, M., & Henderson, L. (2011, June). *Re-living First Year*. Paper presented at the 14th Pacific Rim FYHE Conference 2011, Fremantle, WA.
- Cooke, R., Bewick, B. M., Barkham, M., Bradley, M., & Audin, K. (2006). Measuring, monitoring and managing the psychological well-being of first year university students. *British Journal of Guidance and Counselling*, 34(4), 505-517.
- Creed, P. A., French, J., & Hood, M. (2015). Working while studying at university: The relationship between work benefits and demands and engagement and well-being. *Journal of Vocational Behavior*, 86, 48-57. doi:10.1016/j.jvb.2014.11.002
- Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Thousand Oaks: SAGE Publications.
- Creswell, J. W. (2014). The Selection of a Research Approach *Research Design: qualitative, quantitative and mixed methods approaches* (pp. 3-23).
- Crosling, G., Heagney, M., & Thomas, L. (2009). Improving Student Retention in Higher Education: Improving Teaching and Learning. *Australian Universities Review*, 51(2), 9-18.
- Darrow, A., Johnson, C. M., Meeker Miller, A., & Williamson, P. (2002). Can Students Accurately Assess Themselves? Predictive Validity of Student Self-Reports. *Update: Applications of Research in Music Education*, 20(2), 8-11.
- Daugherty, T. K., & Lane, E. J. (1999). A Longitudinal Study of Academic and Social Predictors of College Attrition. *Social Behavior and Personality*, 27(4), 355-362.

- De Jong, T., Cullity, M., & Ashton, J. (2011, June). *Enhancing the first year experience in higher education: Curriculum innovation and the student learning journey*. Paper presented at the 14th Pacific Rim FYHE Conference, Fremantle, WA.
- Debozy, E. (2009). Are teacher education students ready for online learning? *Teaching English with Technology*, 9(2), 1-15.
- Decker, J., & Beltran, V. (2015, October). *Learning how to learn: Strategies to develop students' self-regulated learning skills in online courses*. Paper presented at the 21st Annual Online Learning Consortium International Conference 2015, Orlando, Florida.
- Delahunty, J., Verenikina, I., & Jones, P. (2014). Socio-emotional connections: identity, belonging and learning in online interactions. A literature review. *Technology, Pedagogy and Education*, 23(2), 243-265. doi:10.1080/1475939X.2013.813405
- Denzin, N. K., & Lincoln, Y. S. (Eds.). (1994). *Handbook of Qualitative Research*. California, USA: SAGE Publications Inc.
- Didarloo, A., & Khalkhali, H. R. (2014). Assessing study skills among university students: an Iranian survey. *Journal of Educational Evaluation for Health Professions*, 11, 8-11. doi:10.3352/jeehp.2014.11.8
- DiRienzo, C., & Lilly, G. (2014). Online versus face-to-face: Does delivery method matter for Undergraduate Business School learning? *Business Education and Accreditation*, 6(1), 1-11.
- Dluzewska, T., Lindsay, K., & Dianne, K. (2011, June). *Nothing succeeds like success: Motivating students returning to study to believe in their academic potential*. Paper presented at the 14th Pacific Rim FYHE Conference, Fremantle, WA.
- Docebo. (2014). *E-Learning Market Trends & Forecast 2014-2016 Report*. Retrieved from <http://www.docebo.com>
- Dooley, L. M. (2002). Case Study Research and Theory Building. *Advances in Developing Human Resources*, 4(3), 335-354.
- Dowel, D. J., & Small, F. A. (2011). What is the impact of online resource materials on student self-learning strategies? *Journal of Marketing Research*, 33(2), 140-148.
- Drew, S. (1998). Students' Perceptions of their Learning Outcomes. *Teaching in Higher Education*, 3(2), 197-217.
- Driscoll, A., Jicha, K., Hunt, A. N., Tichavsky, L., & Thompson, G. (2012). Can Online Courses Deliver In-class Results? A Comparison of Student Performance and Satisfaction in an Online versus a Face-to-face Introductory Sociology Course. *Teaching Sociology*, 40(4), 312-331. doi:10.1177/0092055X12446624
- Dziuban, C., Moskal, P., Thompson, J., Kramer, L., DeCantis, G., & Hermsdorfer, A. (2015). Student Satisfaction with Online Learning: Is it a Psychological Contract? *Online Learning*, 19(2). Retrieved from <http://files.eric.ed.gov/fulltext/EJ1062943.pdf>
- Eisenhardt, K. M. (1989). Building Theory from Case Study Research. *Academy of Management Review*, 14(4), 532-550.
- Elliott, S., & Adams, N. (2011, June). *Using a Tablet PC to facilitate the engagement and success of students*. Paper presented at the 14th Pacific Rim FYHE Conference, Fremantle, WA.

- Ernst & Young. (2012). *University of the future*. Retrieved from [http://www.ey.com/Publication/vwLUAssets/University\\_of\\_the\\_future/\\$FILE/University\\_of\\_the\\_future\\_2012.pdf](http://www.ey.com/Publication/vwLUAssets/University_of_the_future/$FILE/University_of_the_future_2012.pdf)
- Ferla, J., Valcke, M., & Schuyten, G. (2009). Student models of learning and their impact on study strategies. *Studies in Higher Education*, 34(2), 185-202.
- Fike, D. S., & Fike, R. (2008). Predictors of First-Year Student Retention in the Community College. *Community College Review*, 36(2), 68-88.
- Findlay, L., Ballinger, C., & Hoboken, N. (Eds.). (2006). *Qualitative Research for Allied Health Professionals: Challenging Choices*: J Wiley & Sons.
- Flyvbjerg, B. (2006). Five Misunderstandings About Case-Study Research. *Qualitative Inquiry*, 12, 219-245.
- Fox, F. E., Morris, M., & Rumsey, N. (2007). Doing Synchronous Online Focus Groups With Young People: Methodological Reflections. *Qualitative Health Research*, 17(4), 539-547.
- Gabriel, M. A., Campbell, B., Wiebe, S., MacDonald, R. J., & McAuley, A. (2012). The Role of Digital Technologies in Learning: Expectations of First Year University Students. *Canadian Journal of Learning and Technology*, 38(1), 1-18.
- Garmston, R., & Wellman, B. (1994). Insights from Constructivist Learning Theory. *Educational Leadership*, 51(7), 84-85.
- Glasser, J., Dixit, J., & Green, D. P. (2002). Studying Hate Crime with the Internet: What Makes Racists Advocate Racial Violence? *Journal of Social Issues*, 58(1), 177-193.
- Gleason, B. J. (2004, December). *Retention Issues in Online Programs: A Review of the Literature*. Paper presented at the Second AIMS International Conference on Management, AIMS International Calcutta, India.
- Glesne, C., & Peshkin, A. (1992). *Becoming Qualitative Researchers: An Introduction*. White Plains, New York: Longman.
- Gohn, L., Swartz, J., & Donnelly, S. (2000/2001). A Case Study of Second Year Student Persistence. *Journal of College Student Retention*, 2(4), 271-294.
- Grabe, M., & Christopherson, K. (2008). Optional student use of online lecture resources: resource preferences, performance and lecture attendance. *Journal of Computer Assisted Learning*, 24(1), 1-10.
- Grant, D. M., Malloy, A. D., & Murphy, M. C. (2009). A Comparison of Student Perceptions of their Computer Skills to their Actual Abilities. *Journal of Information Technology Education*, 8, 141-160.
- Griffin, R., MacKewn, A., Moser, E., & VanVuren, K. W. (2013). Learning Skills and Motivation: Correlates to Superior Academic Performance. *Business Education and Accreditation*, 5(1), 53-65.
- Gruber, T., Szmigin, I., Reppel, A. E., & Voss, R. (2008). Designing and conducting online interviews to investigate interesting consumer phenomena. *Qualitative Market Research: An International Journal*, 11(3), 256-274.
- Guba, E. G., & Lincoln, Y. S. (1982). Epistemological and Methodological Bases of Naturalistic Inquiry. *Educational Communication and Technology*, 30(4), 233-252.
- Haas, L. (2015, October). *Starting Strong: A personalized, adaptive approach to online orientation*. Paper presented at the 21st Annual Online Learning Consortium International Conference 2015, Orlando, Florida.

- Hachey, A. C., Wlandis, C. W., & Conway, K. M. (2012). Is the Second Time the Charm? Investigating Trends in Online Re-enrollment, Retention and Success. *The Journal of Educators Online*, 9(1), 1-25.
- Hafner, A., Stock, A., & Oberst, V. (2015). Decreasing students' stress through time management training: an intervention study. *European Journal of Psychology Education*, 30, 81-94. doi:10.1007/s10212-014-0229-2
- Hanover Research. (2012). *Student Services for Online Learning: Finding the Student's Perspective*. United States of America: Hanover Research
- Harris, T. (2015). Grounded theory. *Nursing Standard*, 29(35), 32-39.
- Heaton-Shrestha, C., May, S., & Burke, L. (2009). Student retention in higher education: What role for virtual learning environments? *Journal of Further and Higher Education*, 33(1), 83-92.
- Henry, M., Pooley, J. A., & Omari, M. (2014, January). *Student motivations for studying online: A qualitative study*. Paper presented at the Transformative, innovative and engaging: The 23rd Annual Teaching Learning Forum, Perth: The University of Western Australia.
- Herrington, J., Reeves, T., & Oliver, R. (2005). Online Learning as Information Delivery: Digital Myopia. *Journal of Interactive Learning Research*, 16(4), 353-367.
- Hirt-Marchand, J. (2005). Online research captures audience insight, competitive data. *Managed Healthcare Executive*, 15(7), 30-32.
- Hiskey, S., & Troop, N. A. (2002). Online Longitudinal Survey Research: Viability and Participation. *Social Science Computer Review*, 20, 250-259.
- Horstmanshof, L., & Zimitat, C. (2007). Future time orientation predicts academic engagement among first-year university students. *British Journal of Educational Psychology*, 77, 703-718.
- Huang, X., Dedegikas, C., & Walls, J. (2011). Using multimedia technology to teach Modern Greek Language online in China: Development, implementation and evaluation. *European Journal of Open, Distance and E-Learning*, 1, 1-9.
- Huntly, H., & Donovan, J. (2009). Developing academic persistence in first year tertiary students: A case study. *Studies in Learning, Evaluation, Innovation and Development*, 6(1), 1-14.
- Hyllegard, D., Deng, H., & Hunter, C. (2008). Why do Students Leave Online Courses? Attrition in Community College Distance Learning Courses. *International Journal of Instructional Media*, 35(4), 429-434.
- Ilgaz, H., & Gulbahar, Y. (2015). A Snapshot of Online Learners: e-Readiness, e-Satisfaction and Expectations. *International Review of Research in Open and Distributed Learning*, 16(2), 171-187.
- Im, E., & Chee, W. (2006). An Online Forum as a Qualitative Research Method: Practical Issues. *Nursing Research*, 55(4), 267-273.
- Institute for Teaching and Learning Innovation. (2015). *Future trends in teaching and learning in higher education*. The University of Queensland
- Jacobson, D. (1999). Impression Formation in Cyberspace: Online Expectations and Offline Experiences in Text-based Virtual Communities. *Journal of Computer-Mediated Communication*, 5(1), 0. doi:10.1111/j.1083-6101.1999.tb00333.x
- Jepsen, D. M., & Varhegyi, M. M. (2011). Awareness, knowledge and intentions for postgraduate study. *Journal of Higher Education Policy and Management*, 33(6), 605-617. doi:10.1080/1360080X.2011.621187

- Jones, J., Warren, S., & Robertson, M. (2009). Increasing Student Discourse to Support Rapport Building in Web and Blended Courses Using a 3D Online Learning Environment. *Journal of Interactive Learning Research*, 20(3), 269-294.
- Jones, J. B. (2011, June 17). Grading. *The Chronicle of Higher Education*. Retrieved from <http://chronicle.com/blogs/profhacker/my-online-summer-grading/34157>
- Jones, R. (2008). *Student retention and success: a synthesis of research*. York: HEA
- Julal, F. S. (2015). Predictors of undergraduate students' university support service use during the first year of university. *British Journal of Guidance and Counselling*. doi:10.1080/03069885.2015.1119232
- Karlsson, C. (1993). *Psychological Qualitative Research from a Phenomenological Perspective*. Stockholm, Sweden: Almqvist & Wiksell International.
- Kelm, O. R. (2011). Social Media: It's What Students Do. *Business Communication Quarterly*, 74, 505-520.
- Kember, D. (1989). A Longitudinal-Process Model of Drop-Out from Distance Education. *Journal of Higher Education*, 60(3), 278-301.
- Khawaja, N. G., & Dempsey, J. (2008). A Comparison of International and Domestic Tertiary Students in Australia. *Australian Journal of Guidance and Counselling*, 18(1), 30-46.
- Kift, S. (2004). A Tale of Two Sectors: Dynamic Curriculum Change for a Dynamically Changing Profession. *Journal of Commonwealth Law and Legal Education*, 2(2), 5-22.
- Kift, S., & Nelson, K. (2005, July). *Beyond curriculum reform: Embedding the transition experience*. Paper presented at the 28th HERDSA Annual Conference, The University of Sydney, Sydney, Australia.
- Kikuchi, H. (2006). Motivational factors affecting online learning by Japanese MBA students. *Australasian Journal of Educational Technology*, 22(3), 398-415.
- Kim, K.-J. (2009). Motivational Challenges of Adult Learners in Self-Directed E-Learning. *Journal of Interactive Learning Research*, 20(3), 317-335.
- Kim, K.-J., & Frick, T. (2011). Changes in Student Motivation during Online Learning. *Journal of Educational Computing Research*, 44(1), 1-23. doi:10.2190/EC.44.1.a
- Kleiman, S. (2004). Phenomenology: To wonder and search for meanings. *Nurse Researcher*, 11(4), 7-19.
- Klingsieck, K. B., Grund, A., Schmid, S., & Fries, S. (2013). Why Students Procrastinate: A Qualitative Approach. *Journal of College Student Development*, 54(4), 397-412. doi:10.1353/csd.2013.0060
- Knowles, E., & Kerkman, D. (2007). An Investigation of Students Attitude and Motivation toward Online Learning. *Student Motivation*, 2, 70-80.
- Kramer, A., & Bohrs, S. (2016). Experiences and Future Expectations towards Online Courses - An Empirical Study of the B2C-and B2B-Segments. *Journal of Education and Training Studies*, 4(1), 23-31. doi:10.11114/jets.v4i1.1104
- Krause, K. (2005, October). *The Changing Face of the First Year: Challenges for Policy and Practice in Research-led Universities*. Paper presented at the First Year Experience Workshop 2005, University of Queensland, Queensland, Australia.

- Krause, K. (2006, June). *Student Diversity in the First Year: Challenges and Rewards*. Paper presented at the 4th Annual Conference on Teaching and Learning in Higher Education: The Challenge of Diversity - Teaching, Support and Student Learning, National University of Ireland, Galway.
- Krause, K. (2012). Addressing the wicked problem of quality in higher education: theoretical approaches and implications. *Higher Education Research and Development*, 31(3), 285-297. doi:10.1080/07294360.2011.634381
- Krause, K., Hartley, R., James, R., & McInnis, C. (2005). *The First Year Experience in Australian Universities: Findings from a Decade of National Studies*. Melbourne: Department of Education, Science and Training.
- Kraut, R., Olson, J., Banaji, M., Bruckman, A., Cohen, J., & Couper, M. (2004). Psychological Research Online: Report of Board of Scientific Affairs' Advisory Group on the Conduct of Research on the Internet. *American Psychologist*, 59(2), 105-117.
- Kuit, T., & Fildes, K. (2011, June). *Increasing connectedness and motivation amongst first year biology students through an authentic group work project*. Paper presented at the 14th Pacific Rim FYHE Conference, Fremantle, WA.
- Kung, S. (2002). Factors that Affect Students' Decision to Take Distance Learning Courses: A Survey Study of Technical College Students in Taiwan. *Educational Media International*, 39(3-4), 299-305. doi:10.1080/09523980210166044
- Kuo, Y., Walker, A., Belland, B., & Schroder, K. (2013). A Predictive Study of Student Satisfaction in Online Education Programs. *The International Review of Research in Open and Distance Learning*, 14(1), 16-39.
- Lambrinidis, G. (2014). Supporting online, non-traditional students through the introduction of effective e-learning tools in a pre-university tertiary enabling programme. *Journal of Higher Education Policy and Management*, 36(3), 257-267. doi:10.1080/01587919.2014.899053
- Larson, L. C. (2009). Reader response meets new literacies: empowering readers in online learning communities. *The Reading Teacher*, 62(8), 638-649.
- Lau, L. K. (2003). Institutional Factors Affecting Student Retention. *Education*, 124(1), 126-136.
- Law, K., Lee, V., & Yu, Y. (2010). Learning motivation in e-learning facilitated computer programming courses. *Computers and Education*, 55, 218-228. doi:10.1016/j.compedu.2010.01.007
- Lederman, D., & Jaschik, S. (2013, August 27). Survey of Faculty Attitudes on Technology. *Inside Higher Education*. Retrieved from <http://www.insidehighered.com>
- Lee, M.-C. (2010). Explaining and predicting users' continuance intention toward e-learning: An extension of the expectation-confirmation model. *Computers and Education*, 54, 506-516.
- Lee, Y., & Choi, J. (2013). A Structural Equation Model of Predictors of Online Learning Retention. *Internet and Higher Education*, 16, 36-42. doi:10.1016/m.heduc.2012.01.005
- Lee, Y., Choi, J., & Kim, T. (2013). Discriminating factors between completers of and dropouts from online learning courses. *British Journal of Educational Technology*, 44(2), 328-337. doi:10.1111/j.1467-8535.2012.01306.x
- Lesgold, A. (2004). Contextual requirements for constructivist learning. *International Journal of Educational Research*, 41, 495-502.

- Liamputtong, P., & Ezzy, D. (2005). *Qualitative Research Methods* (2nd ed.). Victoria, Australia: Oxford University Press.
- Lo, C. C., Johnson, E., & Tenorio, K. (2011). Promoting student learning by having college students participate in an online environment. *Journal of the Scholarship of Teaching and Learning*, 11(2), 1-15.
- Loh, J., & Smyth, R. (2010). Understanding Students' Online Learning Experiences in Virtual Teams. *Journal of Online Learning and Teaching*, 6(2), 335-342.
- Longden, B. (2006). An Institutional Response to Changing Student Expectations and their Impact on Retention Rates. *Journal of Higher Education Policy and Management*, 28(2), 173-187. doi:10.1080/13600800600751044
- Lonn, S., & Teasley, S. D. (2009). Saving time or innovating practice: Investigating perceptions and uses of Learning Management Systems. *Computers and Education*, 53, 686-694.
- Lopez-Bonilla, J. M., Barrera, R. B., Serrano, M. A. R., Lopez-Bonilla, L. M., Florencio, B. P., Rodriguez, M. C. R., & Altamira, B. S. (2012). Reasons which influence on the students' decision to take a university course: differences by gender and degree. *Educational Studies*, 38(3), 297-308. doi:10.1080/03055698.2011.598690
- Lykourantzou, I., Giannoukos, I., Nikolopoulos, V., Mpardis, G., & Loumos, V. (2009). Dropout prediction in e-learning courses through the combination of machine learning techniques. *Computers and Education*, 53, 950-965.
- Martens-Baker, S. (2009). Fantasy Island Meets the Real World: Using Online Discussion Forums in Collaborative Learning. *English Journal*, 98(5), 88-94.
- Mason, D., Barnes, C., & Shelton, K. (2015, October). *Experiences of Successful Undergraduate Students in Online Science Courses*. Paper presented at the 21st Annual Online Learning Consortium International Conference 2015, Orlando, Florida.
- McAllister, C. (2009). Teaching Online: Growth in Online Education. *Distance Learning*, 6(2), 35-40.
- McDougall, B. (2014, February 26). School cyber bullying growing: report details self-harm, bomb recipes. *The Daily Telegraph*. Retrieved from <http://www.dailytelegraph.com.au/news/nsw/school-cyber-bullying-growing-report-details-selfharm-bomb-recipes/story-fni0cx12-1226837704606>
- McGinley, V., Osgood, J., & Kenney, J. (2012). Exploring Graduate Students' Perceptual Differences of Face-to-face and Online Learning. *Quarterly Review of Distance Education*, 13(3), 177-182.
- McLaughlin, P., & Mills, A. (2009). Where shall the future student learn? Student expectations of university facilities for teaching and learning. *Synergy*, 7(1), 8-13.
- Menz, P., & Jungic, V. (2015). A University Math Help Centre as a Support Framework for Students, the Instructor, the Course, and the Department. *Journal of University Teaching and Learning Practice*, 12(1), 1-18.
- Merriam, S., & Bierema, L. (2014). *Adult Learning: Linking Theory and Practice*. Retrieved from <http://ebookcentral.proquest.com/lib/ecu/detail.action?docID=1376941>
- Mills, K. (2005). Math Emporium: The use of technology has changed the way Virginia Tech's Introductory math classes are taught. *National CrossTalk*, 13(1). Retrieved from <http://www.highereducation.org/crosstalk/ct0105/news0105-virginia.shtml>

- Mills, W. (2015, October). *Engaging online students to increase retention*. Paper presented at the 21st Annual Online Learning Consortium International Conference 2015, Orlando, Florida.
- Moody, J. (2004). Distance Education: Why are the Attrition Rates so High? *The Quarterly Review of Distance Education*, 5(3), 205-210.
- Moore, C., & Greenland, S. (2017). Employment-driven online student attrition and the assessment policy divide: an Australian open-access higher education perspective. *Journal of Open, Flexible and Distance Learning*, 21(1), 52-62.
- Moore, J. L., Dickson-Deane, C., & Galyen, K. (2011). e-Learning, online learning, and distance learning environments: Are they the same? *Internet and Higher Education*, 14, 129-135. doi:10.1016/j.iheduc.2010.10.001
- Morgan, C. K., & Tam, M. (1999). Unravelling the complexities of distance education student attrition. *Distance Education*, 20(1), 96-108.
- Moro-Egido, A. I., & Panades, J. (2010). An Analysis of Student Satisfaction: Full-Time vs. Part-Time Students. *Social Indicators Research*, 92(2), 363-378.
- Mupinga, D. M., Nora, R. T., & Yaw, D. C. (2006). The Learning Styles, Expectations and Needs of Online Students. *College Teaching*, 54(1), 185-189.
- Nagel, L., Blignaut, A.S. & Cronjé, J.C. (2009). Read-only participants: a case for student communication in online classes. *Interactive Learning Environments*, 17(1), 37-51.
- Nelson, J. A. (2008). Advantages of Online Education. *Home Health Care Management and Practice*, 20(6), 501-502.
- Nelson, K., Kift, S., & Clarke, J. (2008, June/July). *Expectations and realities for first year students at an Australian university*. Paper presented at the 11th Pacific Rim First Year in Higher Education Conference 2008, Hobart.
- Nelson, K., Kift, S., & Harper, W. (2005, September). *Any portal in a storm? Aligning online engagement patterns with the needs of transition students*. Paper presented at the OLT 2005, Beyond Delivery, Brisbane, Queensland.
- Nonis, S. A., & Fenner, G. H. (2011). An exploratory study of student motivations for taking online courses and learning outcomes. *Journal of Instructional Pedagogies*, 7, 2-13.
- Noor, K. B. M. (2008). Case Study: A Strategic Research Methodology. *American Journal of Applied Sciences*, 5(11), 1602-1604.
- Norton, A., Sonnemann, J., & McGannon, C. (2013). *The online evolution: when technology meets tradition in higher education*. Grattan Institute
- O'Shea, S., Stone, C., & Delahunty, J. (2015). "I 'feel' like I am at university even though I am online." Exploring how students narrate their engagement with higher education institutions in an online learning environment. *Distance Education*, 36(1), 41-58. doi:10.1080/01587919.2015.1019970
- Oh, E. G., & Kim, H. S. (2016). Understanding Cognitive Engagement in Online Discussion: Use of a Scaffolded, Audio-based Argumentation Activity. *International Review of Research in Open and Distributed Learning*, 17(5), 28-48.
- Oliver, B., Jones, S., & Ferns, S. (2010). *C2010 Final Report*. Curtin University. Retrieved from <http://c2010.curtin.edu.au>
- Oliver, R. (2000). When Teaching Meets Learning: Design Principles and Strategies for Web-based Learning Environments that Support Knowledge Construction. In R. Sims, M. O'Reilly & S. Sawkins (Ed.) *Proceedings of the*



- 17th Annual ASCILITE Conference, 17-28. Retrieved from [http://www.ascilite.org/conferences/coffs00/a2k\\_main\\_conf04.html](http://www.ascilite.org/conferences/coffs00/a2k_main_conf04.html)
- Oliver, R. (2005). Quality assurance and e-learning: blue skies and pragmatism. *Research in Learning Technology*, 13(3), 173-187. doi:10.1080/09687760500376389
- Oliver, R., & Herrington, J. (2002). Online Learning Design for Dummies: Professional Development Strategies for Beginning Online Designers. In P. Barker & S. Rebelsky (Ed.) *ED-MEDIA 2002, World Conference on Educational Multimedia, Hypermedia and Telecommunications*, 1500-1505. Retrieved from <http://elrond.scam.ecu.edu.au/oliver/papers.htm>
- Oliver, R. L. (1980). A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions. *Journal of Marketing Research*, 17, 460-469.
- Olsen, A., & Spain, J. (2009). *Staying the course: retention and attrition in Australian universities*. Australian Universities International Directors' Forum. Retrieved from <http://www.spre.com.au/download/AUIDFRetentionResultsFindings.pdf>
- Oomen-Early, J., & Murphy, L. (2009). Self-Actualization and E-Learning: A Qualitative Investigation of University Faculty's Perceived Needs for Effective Online Instruction. *International Journal on E-Learning*, 8(2), 223-240.
- Orrell, J. (2011). *Good Practice Report: Work-Integrated Learning*. Australian Learning and Teaching Council Limited. Retrieved from [http://www.olt.gov.au/system/files/resources/GPR\\_Work\\_Integrated\\_Learning\\_Orrell\\_2011.pdf](http://www.olt.gov.au/system/files/resources/GPR_Work_Integrated_Learning_Orrell_2011.pdf)
- Osborne, R. E., Kriese, P., Tobey, H., & Johnson, E. (2009). And Never the Two Shall Meet: Student Vs. Faculty Perceptions of Online Courses. *Journal of Educational Computing Research*, 40(2), 171-182.
- Packham, G., Jones, P., Miller, C., & Thomas, B. (2004). E-Learning and retention: Key factors influencing student withdrawal. *Education and Training*, 46(6/7), 335-342. doi:10.1108/0040091041055240
- Paechter, M., Maier, B., & Macher, D. (2010). Students' expectations of, and experiences in e-learning: Their relation to learning achievements and course satisfaction. *Computers and Education*, 54, 222-229.
- Palmer, R. T., Davis, R. J., & Maramba, D. C. (2011). The Impact of Family Support on the Success of Black Men at an Historically Black University: Affirming the Revision of Tinto's Theory. *Journal of College Student Development*, 52(5), 577-597.
- Palmer, S. R., & Holt, D. M. (2009). Examining Student Satisfaction With Wholly Online Learning. *Journal of Computer Assisted Learning*, 25, 101-113.
- Park, J., & Choi, H. J. (2009). Factors Influencing Adult Learners' Decision to Drop Out or Persist in Online Learning. *Educational Technology and Society*, 12(4), 207-217.
- Parsons-Pollard, N., Lacks, R. D., & Grant, P. H. (2008). A comparative assessment of student learning outcomes in large online and traditional campus-based introduction to criminal justice courses. *Criminal Justice Studies: A Critical Journal of Crime, Law and Society*, 21(3), 239-251.
- Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). California, USA: SAGE Publications Inc.

- Patton, M. Q. (1999). Enhancing the quality and credibility of qualitative analysis. *Health Services Research, 34*(5), 1189-1208.
- Paulus, T. M., & Roberts, G. (2006). Learning Through Dialogue: Online Case Studies in Educational Psychology. *Journal of Technology and Teacher Education, 14*(4), 731-754.
- Phye, G. E. (Ed.). (1997). *Handbook of Academic Learning: Construction of Knowledge*. USA: Academic Press Inc.
- Picciano, A. (2006). Online Learning: Implications for Higher Education Pedagogy and Policy. *Journal of Thought, 41*(1), 75-94.
- Piotrowski, C., & Vodanovich, S. J. (2000). Are the Reported Barriers to Internet-Based Instruction Warranted?: A Synthesis of Recent Research. *Education, 121*(1), 48-53.
- Porras-Hernandez, L. H. (2000). Student variables in the evaluation of mediated learning environments. *Distance Education, 21*(2), 385-403.
- Pridham, B., & Deed, C. (2012). Applied learning and community partnerships improve student engagement in Australia. *Middle School Journal, 44*(1), 36-42.
- Priest, H. (2004). Phenomenology. *Nurse Researcher, 11*(4), 4-6.
- Pritchett, M. (2009). *Community college online courses: Student retention*. (Doctoral dissertation), Wayne State University.
- Promnitz, J., & Germain, G. (1996). *Student Support Services and Academic Outcomes: Achieving Positive Outcomes*. Canberra: Australian Government.
- Rao, K., & Tanners, A. (2012). Curb Cuts in Cyberspace: Universal Instructional Design for Online Courses. *Journal of Postsecondary Education and Disability, 24*(3), 211-229.
- Rekkedal, T. (2011). Local support for online learners with possible learning disabilities. *European Journal of Open, Distance and E-Learning, 1*, 1-16.
- Resop Reilly, J., Gallagher-Lepak, S., & Killion, C. (2012). "Me and My Computer": Emotional Factors in Online Learning. *Nursing Education Perspectives, 33*(2), 100-105.
- Reynolds, L. (2011, June). *Don't crush my dream: A thematic analysis of appeal letters written by students who have been asked to 'show cause' for academic poor performance*. Paper presented at the 14th Pacific Rim FYHE Conference, Fremantle, WA.
- Richardson, J. C., & Newby, T. (2006). The Role of Students' Cognitive Engagement in Online Learning. *The American Journal of Distance Education, 20*(1), 23-37.
- Richardson, V. (2003). Constructivist Pedagogy. *Teachers College Record, 105*(9), 1623-1640.
- Rosser, M. (2015, October). *Inaccurate student self-perceptions and performance potential: An institutional strategy emerges*. Paper presented at the 21st Annual Online Learning Consortium International Conference 2015, Orlando, Florida.
- Rowland, M. (2014, May 5). CSIRO warns Australia needs a cultural change in dealing with cyber security, TV News report. *The ABC*. Retrieved from <http://www.abc.net.au/news/2014-05-05/csiro-warns-australia-needs-cyber-security/5429606>

- Ryle, A., & Cumming, K. (2007). Reflections on Engagement in Online Learning Communities. *International Journal of Pedagogies and Learning*, 3(3), 35-46.
- Saadé, R. G., & Kira, D. (2009). Computer Anxiety in E-Learning: The Effect of Computer Self-Efficacy. *Journal of Information Technology Education*, 8, 177-191.
- Sansone, C., Smith, J., Thoman, D., & MacNamara, A. (2012). Regulating interest when learning online: Potential motivation and performance trade-offs. *Internet and Higher Education*, 15, 141-149. doi:10.1016/j.iheduc.2011.10.004
- Santhiveeran, J. (2005). Building Online Communication into Courses. *Computers in the Schools: Interdisciplinary Journal of Practice, Theory, and Applied Research*, 22, 43-55. doi:10.1300/J025v22n01\_05
- Savitz-Romer, M., & Jager-Hyman, J. (2009). Stronger Together. *Principal Leadership*, 9(8), 49-53.
- Savoy, A., Proctor, R. W. & Salvendy, G. (2009). Information retention from PowerPoint and traditional lectures. *Computers and Education*, 52, 858-867.
- Schober, B., Wagner, P., Reimann, R., Atria, M., & Spiel, C. (2006). Teaching Research Methods in an Internet-Based Blended-Learning Setting (Vienna E-Lecturing). *Methodology*, 2(2), 73-82.
- Scutter, S., Palmer, E., Luzecky, A., Burke da Silva, K., & Brinkworth, R. (2011). What do commencing undergraduate students expect from first year university? *The International Journal of the First Year in Higher Education*, 2(1), 8-20. doi:10.5204/intjfyhe.v2i1.54
- Seijts, G. H., & Latham, G. P. (2011). The Effect of Commitment to a Learning Goal, Self-Efficacy, and the Interaction Between Learning Goal Difficulty and Commitment on Performance in a Business Simulation. *Human Performance*, 24, 189-204. doi:10.1080/08959285.2011.580807
- Seo, E. H. (2009). The relationship of procrastination with a mastery goal versus an avoidance goal. *Social Behavior and Personality*, 37(7), 911-919.
- Seok, S., DaCosta, B., Kinsell, C., & Tung, C. K. (2010). Comparison of Instructors' and Students' Perceptions of the Effectiveness of Online Courses. *The Quarterly Review of Distance Education*, 11(1), 25-36.
- Serhan, D. (2010). Online Learning: Through Their Eyes. *International Journal of Instructional Media*, 37(1), 19-24.
- Seymour, W. S. (2001). In the flesh or online? Exploring qualitative research methodologies. *Qualitative Research*, 1(2), 147-168.
- Shackelford, J. L., & Maxwell, M. (2012). Sense of Community in Graduate Online Education: Contribution of Learner to Learner Interaction. *The International Review of Research in Open and Distance Learning*, 13(4), 228-249.
- Shen, D., Cho, M. H., Tsai, C. L., & Marra, R. (2013). Unpacking online learning experiences: Online learning self-efficacy and learning satisfaction. *Internet and Higher Education*, 19, 10-17. doi:10.1016/j.iheduc.2013.04.001
- Siebert, D. C., Siebert, C. F., & Spaulding-Givens, J. (2006). Teaching Clinical Social Work Skills Primarily Online: An Evaluation. *Journal of Social Work Education*, 42(2), 325-336.
- Signor, L., & Moore, C. (2014). Open Access in Higher Education - Strategies for Engaging Diverse Student Cohorts. *Open Praxis*, 6(3), 305-313.

- Simonson, M. (2008). Designing the "Perfect" Online Course. *Distance Learning*, 5(3), 82-84.
- Simpson, O. (2013). Student retention in distance education: are we failing our students? *Open Learning*, 28(2), 105-119.
- Sinclair, J. K. (2011). Student satisfaction with online learning: Lessons from organizational behavior. *Research in Higher Education*, 11, 1-18.
- Smith, B. (2005). Online Student Support Services. *Community College Journal*, 76(2), 26-29.
- Social Research Centre. (2017a). Quality Indicators for Learning and Teaching (QILT). Retrieved from <https://www.qilt.edu.au>
- Social Research Centre. (2017b). Student Experience Survey. Retrieved from [www.srcentre.com.au/qilt/ses](http://www.srcentre.com.au/qilt/ses)
- Stake, R. E. (1995). *The art of case study research*. Thousand Oaks, CA: Sage.
- Stewart, B. L., Waight, C. L., Norwood, M. M., & Ezell, S. D. (2004). Formative and Summative Evaluation of Online Courses. *The Quarterly Review of Distance Education*, 5(2), 101-109.
- Stone, C. (2017). *Opportunity through Online Learning: Improving student access, participation and success in higher education*. National Centre for Student Equity in Higher Education. Curtin University: Perth
- Stone, C., O'Shea, S., May, J., Delahunty, J., & Partington, Z. (2016). Opportunity through online learning: Experiences of first-in-family students in online open-entry higher education. *Australian Journal of Adult Learning*, 56(2), 146-169.
- Suler, J. (1997). Psychological Dynamics of Online Synchronous Conversations in Text-Driven Chat Environments. *The Psychology of Cyberspace*. Retrieved from <http://www-usr.rider.edu/~suler/psyber/texttalk.html>
- Suler, J. (2004). Extending the Classroom into Cyberspace: The Discussion Board. *CyberPsychology and Behavior*, 7, 397-403. Retrieved from <http://www-usr.rider.edu/~suler/psyber/extendclass.html>
- Sutton, G., & Griffin, M. A. (2004). Integrating expectations, experiences, and psychological contract violations: A longitudinal study of new professionals. *Journal of Occupational and Organisational Psychology*, 77, 493-514.
- Swarat, S. (2015, October). *Building a better buy-in: Toward a university-wide community of online course quality assurance*. Paper presented at the 21st Annual Online Learning Consortium International Conference 2015, Orlando, Florida.
- Tanner, J. R., Noser, T. C., & Totaro, M. W. (2009). Business Faculty and Undergraduate Students' Perceptions of Online Learning: A Comparative Study. *Journal of Information Systems Education*, 20(1), 29-40.
- Terry, N. (2001). Assessing Enrollment and Attrition Rates for the Online MBA. *T. H. E. Journal*, 28(7), 64-68.
- Terry, N. B., de La Harpe, K., & Kontur, F. J. (2016). The development of a learning gap between students with strong prerequisite skills and students with weak prerequisite skills. *Journal of College Science Teaching*, 45(3).
- The Concord Consortium. (2006). The Concord Consortium e-Learning Model for Online Courses. Retrieved from [http://www.concord.org/courses/cc\\_e-learning\\_model.html](http://www.concord.org/courses/cc_e-learning_model.html)
- The University of Western Australia (Producer). (2010). New Courses 2012. Retrieved from

- [http://www.studyat.uwa.edu.au/\\_\\_data/assets/pdf\\_file/0003/1016067/Presentation\\_to\\_Career\\_Advisers\\_25\\_June\\_2010.pdf](http://www.studyat.uwa.edu.au/__data/assets/pdf_file/0003/1016067/Presentation_to_Career_Advisers_25_June_2010.pdf)
- Tinto, V. (1975). Dropout from Higher Education: A Theoretical Synthesis of Recent Research. *Review of Educational Research*, 45(1), 89-125.
- Tinto, V. (2002, June). *Establishing Conditions for Student Success: Lessons Learned in the United States*. Paper presented at the 11th Annual Conference of the European Access Network, Monash University, Prato, Italy.
- Tinto, V. (2006). Research and Practice of Student Retention: What next? *Journal of College Student Retention*, 8(1), 1-19.
- Tinto, V., & Pusser, B. (2006). *Moving from theory to action: Building a model of institutional action for student success*. National Postsecondary Education Cooperative. Retrieved from [https://www.researchgate.net/publication/251378009\\_Moving\\_From\\_Theory\\_to\\_Action\\_Building\\_a\\_Model\\_of\\_Institutional\\_Action\\_for\\_Student\\_Succes](https://www.researchgate.net/publication/251378009_Moving_From_Theory_to_Action_Building_a_Model_of_Institutional_Action_for_Student_Succes)s
- Togia, A., Korobili, S., & Malliari, A. (2012). Motivation to Learn and Learning Strategies: IT Courses in a Library and Information Science Department. *Library Review*, 61(1), 41-56.
- Tomas, L., Lasen, M., Field, E., & Skamp, K. (2015). Promoting Online Students' Engagement and Learning in Science and Sustainability Preservice Teacher Education. *Australian Journal of Teacher Education*, 40(11), 79-107. doi:10.14221/ajte.2015v40n11.5
- Tomei, L. A. (2006). The Impact of Online Teaching on Faculty Load: Computing the Ideal Class Size for Online Courses. *Journal of Technology and Teacher Education*, 14(3), 531-541.
- Trekles Milligan, A., & Buckenmeyer, J. A. (2008). Assessing Students for Online Learning. *International Journal on E-Learning*, 7(3), 449-461.
- Trentin, G. (2002). Designing online education courses. *Computers in the Schools*, 17(3-4), 47-66. doi:10.1300/J025v17n03\_4
- Tsai, S., & Machado, P. (2002). E-Learning Basics: Essay. Online learning, web-based learning, or distance learning: unveiling the ambiguity in current terminology. *eLearn Magazine*, July, 2002, 1-4. Retrieved from <http://elearnmag.acm.org/archive.cfm?aid=568597>
- Tufekci, Z. (2008). Grooming, Gossip, Facebook and MySpace: What can we learn about these sites from those who won't assimilate? *Information, Communication & Society*, 11(4), 544-564.
- Twigg, C. A. (2003). Improving Learning and Reducing Costs: New Models for Online Learning. *Educause Review*, 38, 28-38.
- Universities Australia. (2013). *An Agenda for Australian Higher Education 2013-2016: A Smarter Australia*. Retrieved from <http://www.universitiesaustralia.edu.au>
- Universities Australia. (2014). The Student Experience. Retrieved from [www.universitiesaustralia.edu.au/uni-participation-quality/students/The-Student-Experience#.WH7M7FV9671](http://www.universitiesaustralia.edu.au/uni-participation-quality/students/The-Student-Experience#.WH7M7FV9671)
- van Schaik, P., Barker, P., & Beckstrand, S. (2003). A Comparison of On-Campus and Online Course Delivery Methods in Southern Nevada. *Innovations in Education and Teaching International*, 40(1), 5-15.

- Vogel, M. (2010). *Engaging Academics in Professional Development for Technology-Enhanced Learning*. Goldsmiths Learning Enhancement Unit: University of London
- Vygotsky, L. S. (1962). "Thought and Word." In *Thought and language* (pp. 119-153). Cambridge, MA, US: MIT Press.
- Wang, Q. (2009). Designing a web-based constructivist learning environment. *Interactive Learning Environments*, 17(1), 1-13.
- Waschull, S. B. (2001). The Online Delivery of Psychology Courses: Attrition, Performance and Evaluation. *Teaching of Psychology*, 28(2), 143-147.
- Waschull, S. B. (2005). Predicting Success in Online Psychology Courses: Self-Discipline and Motivation. *Teaching of Psychology*, 32(3), 190-192.
- Wastson Scott, S. (2014). A Different Viewpoint on Student Retention. *Higher Learning Research Communications*, 4(2), 18-25.
- Wilcox, P., Winn, S., & Fyvie-Gauld, M. (2005). 'It was nothing to do with the university, it was just the people': the role of social support in the first-year experience of higher education. *Studies in Higher Education*, 30(6), 707-722.
- Willging, P. A., & Johnson, S. D. (2009). Factors that influence students' decision to dropout of online courses. *Journal of Asynchronous Learning Networks*, 13(3), 115-127.
- Willig, C. (2008). *Introducing Qualitative Research in Psychology*. Retrieved from <http://www.ecu.ebib.com.au/patron/FullRecord.aspx?p=361585&tstamp=1292468673&userid=F78EBCDEE8&id=af6ea76bc59b885d5e5dc30618387cc>
- Wilson, A., Chur-Hansen, A., Marshall, A., & Air, T. (2011). Should nursing-related work experience be a prerequisite for acceptance into a nursing programme? A study of students' reasons for withdrawing from undergraduate nursing at an Australian university. *Nurse Education Today*, 31, 456-460. doi:10.1016/j.nedt.2010.09.005
- Wilson, B., & Lowry, M. (2000). Constructivist Learning on the Web. *New Directions for Adult and Continuing Education*, 88, 79-88.
- Wintre, M. G., Bowers, C., Gordner, N., & Lange, L. (2006). Re-Evaluating the University Attrition Statistic: A Longitudinal Follow-Up Study. *Journal of Adolescent Research*, 21, 111-132.
- Wu, J., Tsai, R. J., Chen, C. C., & Wu, Y. (2006). An Integrative Model to Predict the Continuance Use of Electronic Learning Systems: Hints for Teaching. *International Journal on E-Learning*, 5(2), 287-302.
- Wynegar, R. G., & Fenster, M. J. (2009). Evaluation of Alternative Delivery Systems on Academic Performance in College Algebra. *College Student Journal*, 43(1), 170-174.
- Xie, K., & Huang, K. (2014). The role of beliefs and motivation in asynchronous online learning in college-level classes. *Journal of Educational Computing Research*, 50(3), 315-341.
- Xie, X., Lin, F., & Zhang, T. (2001). Comparison between on- and off-campus behaviour and adaptability in online learning: a case from China. *Behaviour and Information Technology*, 20(4), 281-291.
- Xu, D., & Jaggars, S. S. (2011). The effectiveness of distance education across Virginia's community colleges: Evidence from introductory college-level Math and English courses. *Educational Evaluation and Policy Analysis*, 33(3), 360-377.

- Xu, D., & Jaggars, S. S. (2014). Performance Gaps Between Online and Face-to-Face Courses: Differences Across Types of Students and Academic Subject Areas. *The Journal of Higher Education*, 85(5), 633-659.  
doi:10.1353/jhe.2014.0028
- Yager, R. E. (2000). The Constructivist Learning Model. *The Science Teacher*, 67(1), 44-45.
- Yin, R. K. (2003). *Case Study Research: Design and Methods* (3rd ed.). California, USA: SAGE Publications Inc.
- Yu, T., & Richardson, J. C. (2015). An Exploratory Factor Analysis and Reliability Analysis of the Student Online Learning Readiness (SOLR) Instrument. *Online Learning*, 19(5), 120-141.
- Zhang, W., & Perris, K. (2004). Researching the efficacy of online learning: A collaborative effort amongst scholars in Asian Open Universities. *Open Learning*, 19(3), 247-264.

## **Appendix A: The Case University**

The case University is a public university located in Western Australia, with two metropolitan campuses and one regional campus in Western Australia. Established in 1991, it now has over 23,000 students (Case University, 2015a). At the time of data collection specifically, approximately 18,500 students were enrolled in undergraduate courses, and 5,000 in postgraduate courses across the University (Case University, 2012). Sixty-two per cent of students were female, 38 per cent were male, and 75 per cent were enrolled in full-time study, with the remainder enrolled part-time. Approximately 17 per cent, or 3,133 equivalent full-time students were enrolled in the external mode, with almost all of these students participating via OE (Case University, 2012). In 2014, 90 undergraduate courses, including 28 Bachelor degrees, were available for students to complete entirely online (Case University, 2014b). These courses were predominately delivered through an online LMS: *Blackboard*.



## **Appendix B: Participant Recruitment Materials**

**[Restricted content]**

## **Appendix C: Participant Consent Form**

### **An Investigation of the Expectations, Experiences and Outcomes for First-year Students Engaged in Online Learning at Case University.**

#### **Consent Form**

Please complete this form to indicate your consent to participate in this research project. If you have any concerns about participation, please discuss them with the researcher (contact details below) before completing this form.

I ..., agree that:

- I have been provided with a copy of the Information Statement, detailing the research project and my role as a participant, and have read and understood the information provided.
- Any questions I have about participation have been answered and I understand that I am able to ask the researcher/interviewer any further questions about this research as they arise.
- I understand that my participation in this research will involve three online interviews: (1) during Orientation, (2) after one semester, and (3) after one year of study, but that I am able to withdraw my participation at any point, without explanation or penalty.
- I understand that the researcher will contact me to arrange any subsequent interviews (where necessary) and inform me of the progress of the research project, but my contact information will not be released to any third party and I may request not to be re-contacted at any point.
- I understand that the information provided by me will be kept confidential and will only be used for the purposes of this research project, with the results of this research to be published as part of a PhD dissertation and potentially used in related publications and/or conference presentations, but I will not be identified in any reported results, without my consent.

I freely consent to participate in this research project.

Today's date:        /        /

Participant name:

Date of birth:        /        /

Contact email:

Contact phone number:

Current location:    ☐ ACT    ☐ NSW    ☐ NT    ☐ QLD    ☐ SA  
                             ☐ TAS    ☐ VIC    ☐ WA

Please retain a copy of this consent form and the research Information Statement for your own records.

### **Contact Details**

Researcher:

Melanie Johnston

PhD candidate

Faculty of Computing, Health and Science, School of Psychology and Social Science  
Edith Cowan University

Email: [mjohnst9@our.ecu.edu.au](mailto:mjohnst9@our.ecu.edu.au)

Tel: 0402 119 039

Research Supervisor:

Associate Professor Julie Ann Pooley  
School of Psychology and Social Science

Faculty of Computing, Health and Science  
Edith Cowan University

Email: [j.pooley@ecu.edu.au](mailto:j.pooley@ecu.edu.au)

Tel: (61 8) 6304 5591

Research Co-supervisor:

Associate Professor Maryam  
Omari

School of Management

Faculty of Business and Law  
Edith Cowan University

Email: [m.omari@ecu.edu.au](mailto:m.omari@ecu.edu.au)

Tel: (61 8) 9370 6014

## **Appendix D: Example Interview Invitations and Confirmation Emails**

**[Restricted content]**

## Appendix E: Interview Schedules

### Time 1 Interviews

Name: \_\_\_\_\_

Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

Introduction:

- Welcome, questions about interview/research?
- Reiterate re: confidentiality
- Pause/stop any time, take your time, feel free to elaborate/interrupt, no right answers...
- If net stops working etc., just return to chat room – email or phone if problems
- Introduce what will be discussed

1. Demographic and Background Information:

- a. What **course** are you enrolled in? (Faculty, comp?)
- b. Do you intend to study **full-time or part-time**?
- c. Where do you intend to **live** while studying?
- d. What **experience** of studying at **University** level?
- e. What **experience** using **technology** for **learning**?
- f. **Why** did you decide to study **online**?

2. What do you **expect** your course to be like? Prompt re:

- a. Requirements for attendance/**participation**
- b. **Delivery** of course **content** and materials
- c. **Assessment** tasks, including exams
- d. **Interaction** with other **students**
- e. **Interaction** with the **instructor(s)**

- f. Using, and relying on **technology**
  - g. **Where and when** will you study?
  - h. **Time** commitment
3. What **difficulties** or challenges do you expect you might face?
  4. What **support** do you think you might need/receive from Uni/others?
  5. How do you think you will go in the course (**outcomes**, e.g. grades, experience)?
  6. How **enjoyable** and **satisfying** do you think it will be (course and online study)?
  7. What **information** have you received to help form these expectations?
  8. How **realistic/accurate** do you think your expectations are?
  9. Any **further comments**?
  10. Are you happy to be **contacted again** for 2nd interview?

Thank you for your participation...

## Time 2 Interview

Name:

Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

Welcome:

- Remind can pause/stop any time, take your time...
  - If net stops working etc., just return to chat room – email or phone if problems
1. Are you still enrolled in your course? Same load?
  2. What has your experience been like so far?
    - a. Requirements for your study, ‘attendance’ and participation (e.g. reading, lectures)
    - b. The delivery of course content and materials
    - c. Assessment tasks, including exams
    - d. Interaction with other students – have you met any students (online/in-person)?
    - e. Interaction with the instructor(s)
    - f. Using, and relying on technology
    - g. Where and when do you study?
    - h. Time commitment
  3. What difficulties or challenges have you experienced during the last semester?
  4. How did you resolve these challenges/difficulties? Did you seek/receive any support from the Uni/others?
  5. How difficult have you found your course, and studying online?

6. How well do you think you have learned the content of your course over the last semester:
7. How did you go last semester – performance/grades?
8. How satisfied are you with course/studying online so far?
9. How enjoyable has your experience been so far?
10. How realistic do you think your expectations, which we discussed in our last interview, were?
11. Have your expectations changed at all? How?
12. How do you think your initial expectations have affected your experience over the last semester?
13. Will you continue and complete your course all online/at Case University?
14. What advice would you offer other students thinking about studying online?
15. Any further comments you would like to add?
16. Are you happy to be contacted again for your final interview?

Thank you for your participation.



### Time 3 Interviews

Name:

Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

Welcome:

- Remind can pause/stop any time, take your time...
- If net stops working etc., just return to chat room – email or phone if problems

1. Still enrolled in same course? Same load?
2. What has your experience been like so far?
  - a. 'Attendance' and participation
  - b. Delivery of course content and materials
  - c. Assessment tasks, exams
  - d. Interaction with other students
  - e. Interaction with the instructor(s)
  - f. Using, and relying on technology
  - g. Time commitment
3. Difficulties or challenges?
4. Seek/receive support from Uni/others?
5. How difficult course, and studying online?
6. How well learned the content?
7. How did you go (grades)?
8. How satisfied with course/studying online?
9. How enjoyable?
10. How realistic initial expectations?
11. Have your expectations changed? How?

12. Will continue and complete all online/ Case University?
  - a. Does initial reason for online/ Case University still hold?
13. What advice would you offer other students?
14. How course course/services provided by Case University be improved?
15. How have you found interview experience?
  - a. Chat-style interview
  - b. Reflecting on expectations etc.
16. Any further comments?

Thank you for your participation.