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Online scaffolding in a fully online educational leadership course

A thesis
submitted in partial fulfilment
of the requirements for the degree
of
Master of Education
at
The University of Waikato
by
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THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

2015

Abstract

Online scaffolding encompasses a range of effective teaching strategies that help students to achieve their learning goals while at the same time exercising their autonomy. Although online scaffolding is crucial for student learning, not much is known about scaffolding in an online post-graduate course. In order to address this research gap, this study explored the intricacies of online scaffolding in a fully online educational leadership course. Through a mixed-method research design, a case study was developed weaving the perspectives and actions of lecturers and students in a fully online post-graduate educational leadership course. Two interviews with lecturers, two student online surveys and two online forum discussion logs, each one from the start and the end of the course, were analysed using content and statistical analyses. The theory of transactional distance provided a theoretical framework and the literature on scaffolding in distance education guided the analysis process. A third online space, the Question & Answer section, was archived and analysed in order to enrich insights that were emerging from the other data sources. Research outcomes revealed that lecturers' understanding of online scaffolding focused on the design and use of resources, modelling, and the use of questioning in forum discussions in order to facilitate learner engagement with content. At the beginning of the course, lecturers provided a high level of procedural and social scaffolding followed by an on-going learner support (strategic scaffolding), which peaked before assignment deadlines. Students thought of online scaffolding as a coaching process in which lecturers monitor learners' online engagement to provide encouragement, identify misconceptions, and provide direction and feedback when necessary. Furthermore, procedural and strategic scaffolding were reported by students as essential forms of learner support. In particular, students felt that formative and timely feedback was paramount to their online scaffolding and expected lecturers to offer procedural, social, and strategic scaffolding. Sharing of professional experiences and visual resources, a more informal tone of communication, and the use of students' and lecturers' names in online postings were evident throughout the course. In addition, peer scaffolding in online discussions was encouraged by the

lecturer and practised by students through a range of strategies, including agreement with others' ideas, acknowledgment of peers' postings, and answering questions raised by peers. Some suggestions for enhancing online scaffolding in this course, and online teaching in general, include creating a course road map, describing the pace of the course, creating online participation and peer facilitation guidelines, and others.

Acknowledgments

Thanks to the University of Waikato who have awarded me the University of Waikato Master Research Scholarship and the University of Waikato Taught Postgraduate Scholarship.

Thanks to my supervisor Mira Peter for the continuous encouragement and unwavering support throughout this thesis.

Thanks to Elaine Khoo for having chosen me to be her summer research scholar during the software literacy project “Copy, cut, and paste”, in which I have learnt various research skills that helped me during my thesis.

Thanks to Dianne Forbes for helping in the research design and with earlier drafts of this thesis.

Thanks to all participants that willingly participated in this research and the University of Waikato staff, in particular to Alistair Lamb, for all the help provided during my studies.

Thanks to my husband Rafael and all my family back in Brazil for their ongoing encouragement and support.

Table of Contents

| | |
|---|-----|
| Abstract | i |
| Acknowledgments..... | iii |
| Table of Contents | v |
| List of Figures | ix |
| Chapter 1: Introduction | 1 |
| 1.1 Focus of the study | 1 |
| 1.2 Personal motivation for this study..... | 2 |
| 1.3 Problem statement..... | 3 |
| 1.4 Statement of purpose..... | 3 |
| 1.5 Research questions | 3 |
| 1.6 Overview of methodology..... | 4 |
| 1.7 Rationale and significance | 4 |
| 1.8 Organisation of the thesis..... | 5 |
| Chapter 2: Literature Review | 7 |
| 2.1 Scaffolding | 8 |
| 2.2 Online scaffolding..... | 12 |
| 2.3 Scaffolding actions..... | 16 |
| 2.4 Fading scaffolding..... | 19 |
| 2.5 Research gaps..... | 21 |
| Chapter 3: Methodology | 23 |
| 3.1 Rationale for mixed-method research design..... | 23 |
| 3.2 Case study | 25 |
| 3.3 Theoretical framework..... | 26 |
| 3.3.1 The theory of transactional distance | 26 |
| 3.3.2 Transactional distance..... | 27 |

| | | |
|---------------------------|---|----|
| 3.3.3 | Course structure | 27 |
| 3.3.4 | Dialogue | 28 |
| 3.3.5 | Learner autonomy | 29 |
| 3.4 | Research sample | 31 |
| 3.4.1 | Participants | 31 |
| 3.4.2 | The course..... | 32 |
| 3.4.3 | The lecturers | 33 |
| 3.4.4 | The students..... | 33 |
| 3.5 | Research design | 34 |
| 3.6 | Data collection methods | 36 |
| 3.6.1 | Online surveys | 36 |
| 3.6.2 | Semi-structured interviews | 37 |
| 3.6.3 | Online discussion logs | 39 |
| 3.7 | Data analysis..... | 40 |
| 3.7.1 | Content analysis..... | 41 |
| 3.7.2 | Statistical analysis | 42 |
| 3.8 | Ethical considerations..... | 42 |
| 3.8.1 | Informed consent | 43 |
| 3.8.2 | Privacy and anonymity | 43 |
| 3.8.3 | Participants access to this study | 43 |
| 3.9 | Issues of trustworthiness..... | 44 |
| 3.10 | Limitations and delimitations | 46 |
| Chapter 4: Findings | | 49 |
| 4.1 | Online scaffolding | 49 |
| 4.1.1 | Lecturers' perspectives on online scaffolding | 49 |
| 4.1.2 | Students' perspectives on online scaffolding | 53 |
| 4.2 | Procedural Scaffolding | 57 |

| | | |
|-------|---|-----|
| 4.2.1 | Orientation scaffolds | 57 |
| 4.2.2 | Expectation scaffolds | 57 |
| 4.2.3 | Resource scaffolds | 65 |
| 4.3 | Social scaffolding..... | 69 |
| 4.3.1 | Lecturer’s perspectives on social scaffolding | 69 |
| 4.3.2 | Students’ perspectives on social scaffolding..... | 73 |
| 4.4 | Strategic scaffolding..... | 79 |
| 4.4.1 | Lecturer’s perspectives on strategic scaffolding | 80 |
| 4.4.2 | Students’ perspectives on strategic scaffolding | 82 |
| 4.5 | Peer scaffolding..... | 86 |
| 4.5.1 | Agreement with others’ ideas | 87 |
| 4.5.2 | Disagreement with others’ ideas | 88 |
| 4.5.3 | Acknowledgment of peers' postings | 89 |
| 4.5.4 | Answering questions raised by peers | 89 |
| 4.5.5 | Asking for clarification | 90 |
| 4.5.6 | Initiating questions | 91 |
| 4.5.7 | Summarising content..... | 92 |
| 4.5.8 | Development of self-reflection | 93 |
| | Chapter 5: Discussion | 99 |
| 5.1 | Discussion of findings..... | 100 |
| 5.1.1 | How do lecturers understand online scaffolding?..... | 100 |
| 5.1.2 | How do students understand online scaffolding? | 103 |
| 5.1.3 | What types of online scaffolding do students in a fully online educational leadership course expect?..... | 107 |
| 5.1.4 | What types of online scaffolding are implemented by lecturers and students in a fully online educational leadership course? | 110 |
| | Chapter 6: Conclusion..... | 127 |

| | | |
|-------|---|-----|
| 6.1 | Conclusions | 127 |
| 6.1.1 | Lecturers' understanding of online scaffolding..... | 128 |
| 6.1.2 | Students' understanding of online scaffolding | 128 |
| 6.1.3 | Students' expectations regarding online scaffolding..... | 129 |
| 6.1.4 | Multifarious online scaffolding | 129 |
| 6.2 | Suggestions for enhancing online scaffolding..... | 130 |
| 6.2.1 | Create a course road map..... | 131 |
| 6.2.2 | Set up online office hours..... | 131 |
| 6.2.3 | Describe the pace of the course | 131 |
| 6.2.4 | Discussion starters | 132 |
| 6.2.5 | Fostering connectedness | 132 |
| 6.2.6 | Fortify the structure of the course..... | 132 |
| 6.2.7 | Create participation guidelines | 133 |
| 6.2.8 | Create peer facilitation guidelines | 133 |
| 6.3 | Limitations of this study | 133 |
| 6.4 | Recommendations for future research..... | 134 |
| | References | 137 |
| | Appendix A: Start-of-semester lecturer interview | 153 |
| | Appendix B: Start-of-course student online survey | 155 |
| | Appendix C: Categorisation scheme for online scaffolding..... | 162 |
| | Appendix D: End-of-semester lecturer interview..... | 167 |
| | Appendix E: End-of-course student online survey..... | 169 |
| | List of Abbreviations | 175 |
| | List of Acronyms..... | 175 |
| | Glossary..... | 177 |

List of Figures

| | |
|---|----|
| <i>Figure 1.</i> Students' expectations in regard to lecturers' teaching practices at the start of the course (the start-of-course survey)..... | 60 |
| <i>Figure 2.</i> Students' perspectives on the importance of lecturers undertaking specific instructional strategies (the end-of-course survey)..... | 67 |
| <i>Figure 3.</i> Students' perspectives on the online support actions experienced during the course (the end-of-course survey)..... | 68 |
| <i>Figure 4.</i> Student's perspectives in relation to social scaffolding actions undertaken by lecturers during the course (the end-of-course survey)..... | 74 |
| <i>Figure 5.</i> Social scaffolding in students' postings from first and second online discussions. | 75 |
| <i>Figure 6.</i> Students' perspectives on sharing resources in online discussions (the end-of-course survey)..... | 78 |
| <i>Figure 7.</i> Students' perspectives on the importance of specific social scaffolding strategies used by lecturers (the end-of-course survey). | 79 |
| <i>Figure 8.</i> Students' perspectives on strategic scaffolding actions performed by lecturers (the end-of-course survey)..... | 85 |
| <i>Figure 9.</i> Number of students' postings exhibiting peer scaffolds in the first and second online discussions. | 87 |
| <i>Figure 10.</i> Self-perception of peer scaffolding practices as perceived by students (the end-of-course survey). | 95 |

Chapter 1: Introduction

1.1 Focus of the study

Over the past two decades, the notion of scaffolding is becoming increasingly widespread among educators. At the same time, an increasing number of educators and researchers have used the concept of scaffolding to describe and explain the role of teachers and students in guiding student learning. Although there is a great number of studies that examine scaffolding in early childhood, primary and secondary education, there are very few studies that explore scaffolding in tertiary education — especially in educational leadership online classrooms.

In the current literature on scaffolding, there is a wealth of information about effective tools, learner engagement and online teaching practices. However, these studies seldom explore how teachers scaffold students' learning, taking into account the complexity of the online learning environment. Because online scaffolding is crucial for students' positive learning experiences and achievement of educational goals, it is paramount that tertiary educators develop and use effective scaffolding tools to enhance both student experience and their societal well-being. To address the gap in the current literature on online scaffolding at the tertiary level, this study explores the ways that scaffolding has been defined, interpreted and implemented in an online educational leadership course.

In education scaffolding refers to activities that allow a child or novice to solve a problem, execute a task or accomplish a goal which would be beyond his/her unassisted efforts (Wood, Bruner, & Ross, 1976). Typically these are the actions of the teacher or more knowledgeable peer controlling those aspects of the task that are in principle beyond the learner's abilities; therefore allowing the learner to focus on and accomplish those features of the task that are within his/her range of competence (Pea, 2004; Pifarre & Cobos, 2010; Tabak, 2004; Wood et al., 1976).

According to Wood et al. (1976), scaffolding encompasses a range of functions, including getting the learner's attention, simplifying the learner's role

in executing the task, maintaining learner's focus on the task, highlighting relevant aspects of the task, alleviating frustration, and modelling the task. According to Pea (2004), scaffolding in an adult-child interaction involves an evaluation of the learner's proficiency and an adaptive degree of support offered by the adult. The dynamics of scaffolding is characterised by cycles of comparison between the assessed level of learner's achievement and the level of scaffolding that is offered towards the learner's autonomous performance (Pea, 2004).

This chapter starts with my personal motivation for this study followed by the problem statement addressed by this research, my research questions, an overview of the methodology used in this study, and the rationale and significance of this study. This chapter concludes with an overview about the organisation of this thesis.

1.2 Personal motivation for this study

On a personal level, the change that emergent technologies brought to our lives and to educational settings in particular was always fascinating for me. For instance, I worked in a kindergarten where one of our educational resources was a tablet. That complex technology opened almost infinite ways to teach in a more connected and visual way via e-books, videos, games, apps and so forth. The effects of that technology in an early childhood setting increased my curiosity, which led me to study postgraduate disciplines and massive open online courses (MOOCs) in online teaching and learning. During my postgraduate studies I began to observe my lecturers and think about how they, and teachers in general, develop their online pedagogies. In my studies I experienced high and low levels of transactional distance (Moore, 2013) in relation to my lecturers, which hampered and boosted my learning, respectively. These experiences showed me how complex it was to teach online and alerted me to the benefits that the use of appropriate online scaffolding can have on students' academic journeys. Such reflections made me keen to explore online scaffolding in a higher education setting and contribute to their better understanding and enhancement of student learning experiences.

1.3 Problem statement

In a short space of time technology in tertiary education has evolved from providing a few online courses and user-generated web resources to being present everywhere in educational settings (Miller, 2014). Indeed, online student numbers increased substantially since the beginning of the century (Bonk & Khoo, 2014). However, online courses often show high attrition rates (Bonk & Khoo, 2014; Lehman & Conceição, 2014). Undoubtedly, online learning may be an effective way to foster personal and professional development; the question is how we should support students to achieve their learning goals. And this leads us to the purpose of this study.

1.4 Statement of purpose

The aim of this research is to explore the intricacies of online scaffolding and learner engagement in a fully online educational leadership course. The objective of this study is to ultimately inform online pedagogy in tertiary education, by weaving perspectives and practices of lecturers and students with current literature on distance education. Lecturers' and students' perspectives and actions regarding online scaffolding in tertiary education provides a rich educational context that may teach us many lessons about how to facilitate learning for and with online students. The study of scaffolding in this online course can contribute to and advance online pedagogy in this, and potentially other online settings.

1.5 Research questions

To shed light on scaffolding in a fully online educational leadership course, the following research questions were addressed:

1. How do lecturers in this course understand online scaffolding?
2. How do students in this course understand online scaffolding?
3. What types of online scaffolding do students in this course expect?
4. What types of online scaffolding are implemented by the lecturer and students in this course?

1.6 Overview of methodology

This study developed a case study through a mixed-method research design where lecturers' and students' understanding and practices of online scaffolding were investigated. The theory of transactional distance (Moore, 1993, 1997, 2013) was used as the theoretical frame in this exploration. The lens of the transactional distance theory (Moore, 1980, 1986, 1993, 2013) has been helping to distinguish the field of distance education for over 40 years, while providing a pedagogical framework for research in online learning activities (Kang & Gyorke, 2008). Moore and his colleagues were the first researchers-educators to call attention towards distance education within the field of education. A pivotal concept in transactional distance theory is that of transactional distance. Transactional distance refers to the psychological space of potential communication misunderstandings between teachers and students (Moore, 1997). The concept was derived from the actual physical distance between people in online learning environments (Moore & Kearsley, 2005). Moore postulated that transactional distance is regulated by three factors and three variables (Kang & Gyorke, 2008). The three factors are teacher, students and a means of communication, whereas the three variables consist of dialogue, structure and learner autonomy (Moore, 1993, 1997). The transactional distance theory will be discussed in detail in the Methodology chapter.

1.7 Rationale and significance

Over the past two decades distance education researchers and teachers worldwide have raised concerns about several problems in online pedagogy (Bonk & Khoo, 2014), such as adequate training for online instructors (Stavredes, 2011), students experiencing feelings of isolation (Visser, 2007) and absence of feedback from instructors (A. Bischoff, 2000). Such issues point to the need for further investigation of online pedagogy in real educational settings in order to deeply comprehend what factors underpin these problems and what procedures can be developed to overcome them. Therefore the outcomes of this research will inform practitioners in the online educational leadership course about online pedagogy and highlight implications for student learning.

Studies in online scaffolding, especially in conjunction with Web 2.0 technologies, are still at an early stage (West, Hannafin, Hill, & Song, 2013). Although some researchers have found evidence that supports student learning (Salmon, 2011; Salmon, Nie, & Edirishingha, 2010), others have pointed to the need for further research of online scaffolding at the tertiary level (Stavredes & Herder, 2013; Zydney, 2012). As technology has changed the way we live, work and learn, the pursuit of comprehending how online scaffolding can nurture the success of learners is paramount (West et al., 2013). For this reason this study aims to investigate scaffolding practices provided in an online course in order to support learners to achieve their educational goals. In addition, this research may help lecturers rethink their course design and teaching practices since it offers students' views about what they prefer to experience in an educational leadership course.

1.8 Organisation of the thesis

This thesis is organised into six chapters. The first chapter provides the background that sets the stage for the study of online scaffolding and the importance of research in an online educational leadership course. The second chapter consists of a review of the literature about online scaffolding. In the third chapter, I describe the methodology used in this investigation, both the theoretical frame that focuses on the theory of transactional distance and methods used to gather and analyse data. The results of the data analysis are presented in chapter four. In chapter five the results are discussed in regard to their implications for teaching and learning and course design in the online educational leadership course. Finally, in chapter six I will explore ways in which lecturers may support students in their online learning and will suggest possibilities for future research.

Chapter 2: Literature Review

This chapter provides a theoretical overview of how the concept of scaffolding has been developed across research fields up to the point where it is used to describe how instructors facilitate learning in virtual classrooms. An array of themes emerged from the review of the literature and each will be described in the next sections. Emphasis was given to those themes that underpin the research questions proposed by this study as well as implications for online teaching.

Scaffolding

Masons, when they start upon a building,
are careful to test out the scaffolding;
make sure that planks won't slip at busy points,
secure all ladders, tighten bolted joints.
And yet all this comes down when the job's done
showing off walls of sure and solid stone.
So if, my dear, there sometimes seem to be
old bridges breaking between you and me
never fear. We may let the scaffolds fall,
confident that we have built our wall.

(Heaney, 1966, p. 50)

2.1 Scaffolding

To fully comprehend scaffolding, it is necessary to discuss the concept of ‘the zone of proximal development’ (ZPD). Vygotsky defined ZPD as the distance between the developmental stage of an individual when solving a problem by him/herself and the level of potential development when the person is solving a problem with the assistance of, or in collaboration with a more capable person (Berk & Winsler, 1995). Usually it is cognitive scaffolding that is used to support learners in this zone between what they can achieve by themselves and what they can achieve with the help of a person with advanced knowledge and skills (Stavredes & Herder, 2013). The key to effectively embedding cognitive scaffolding into the educational process is to apply a sufficient amount of scaffolding to support learners in their zone of proximal development (Stavredes & Herder, 2013). For instance, cognitive scaffolding can be embedded in the design of an online course to facilitate learning along with educator interactions to support learners’ just-in-time needs (Stavredes & Herder, 2013).

The efficacy of scaffolding depends on the quality of dialogue between an expert and a novice about a learning outcome during the process of goal achievement. In addition, effectiveness is realised when the expert’s pedagogical and strategic knowledge is used to assist students’ unique understanding (Sharma & Hannafin, 2005). To be effective scaffolding has to be oriented by an expert’s comprehension of how and when a learner’s higher order thinking can be most appropriately assisted (Sharma & Hannafin, 2005). In terms of dialogue between teachers and students, Massive Open Online Courses (MOOCs) provide scarce personalised guidance for learners (Gutiérrez-Rojas, Alario-Hoyos, Pérez-Sanagustín, Leony, & Delgado-Kloos, 2014). The term MOOC was created by Stephen Downes and George Siemens in 2008 and was widely adopted in 2012 by world-renowned universities (L. Johnson, Becher, Estrada, & Freeman, 2014). Generally, MOOCs are characterised by a compilation of online multimedia (e.g., video lectures), online assessments, and mechanisms for learners to discuss course content and comment on peers’ contributions (Miller, 2014). Interactions with the lecturer is usually limited or absent as these courses are planned to cater for thousands of students at once; any feedback for students is provided by auto-grading or by fellow students in the course (Miller, 2014). Therefore, in such

courses, students need to have study skills, be self-motivated and rely on peer-scaffolding to persist with the course. In contrast, in 'traditional' online degree courses, there are higher expectations of teacher presence and direct feedback from teacher to student.

Indeed, peer-scaffolding represents a crucial element in online learning, whether it is unfolded in MOOCs or in online degree courses. There are two main variations of peer-scaffolding: The same-age or peer facilitation, which refers to students from the same course moderating the online discussion; and cross-age facilitation, in which older students moderate the dialogue of younger students (Hew & Cheung, 2012). In order to better understand peer facilitation dynamics, Hew and Cheung (2012) developed a series of case studies to find out what motivates students to contribute to online discussions, how to sustain participants' online dialogues and how to foster higher levels of knowledge construction. Their main finding was that students tended to post substantially more in online discussions that are moderated by peers who are conscious of their own thinking and are open-minded. The authors suggest that these two habits of mind (awareness of own thinking and open-mindedness) should be modelled and explained by instructors, who should also discuss with students their benefits and when they are adopted.

As identified by Hew and Cheung (2012), students tend to stop interacting with somebody whom they are unfamiliar with, fearing to offend the other person, especially if they perceive that the individual is not receptive to negative feedback. Some ways of fostering relational capital would be off-task talk, because it can produce a sense of shared meaning, familiarity, and acknowledging participants' contribution (Hew & Cheung, 2012). The authors recommend that learners should first help others by sharing ideas in forum discussions, which in turn would motivate other participants to reciprocate by posting back. The outcomes of reciprocity tend to foster relationships that will increase in trust and grow relational capital over time (Hew & Cheung, 2012). On the other hand, selecting interesting discussion topics or questions, particularly those that are relevant and controversial, may motivate student participation in forum discussions (Hew & Cheung, 2012). Besides, peer facilitators should sum up the key points of an online dialogue from time to time and follow up with pertinent questions after the summary (Hew & Cheung, 2012).

Cross-age peer tutoring studies in tertiary education have also yielded germane outcomes. De Smet, Van Keer, and Valcke (2008, 2009) findings confirmed that cross-age peer tutors perform a mixture of facilitation tasks, with a slight predominance of providing additional information, clarifying the learning task, and planning activities. Hence there appears to be a predominance of providing social scaffolding via offering participation guidelines, stimulating continual participation, and encouraging good discussion manners (De Smet et al., 2009). Additionally, the tutorship phase, which can be defined as an individual's expanding experience in tutoring over time, has an effect on the relative incidence of moderating learning content, mediating knowledge construction, and off-task talk when considering organisational and social support in asynchronous online discussions (De Smet et al., 2009). Indeed, the nature of the tutoring behaviour is not constant over time as peer scaffolding is a dynamic process in which task specificity has a significant function (De Smet et al., 2008).

As explained by Pifarre and Cobos (2010), scaffolding is the primary mechanism for developing self-regulation processes. It is assumed that self-regulation occurs first at the social level, where learners engage with adults and others who offer modelling, instruction, social guidance, and feedback (Pifarre & Cobos, 2010). As a consequence learners can internalise these behaviours (Gallimore & Tharpe, 1990). If applied over time, scaffolding supports learners to be self-regulated: Capable to motivate themselves, plan their learning, evaluate their progress and adjust strategies, as well as find and use resources to facilitate their learning (Schunk & Zimmerman, 1994).

Relationships and distinctions between scaffolding and affordances are also highlighted in the literature. Affordances are objective, real and perceivable possibilities for action; they are both a function of the environment and of the observer (Gibson, 1986). Estany and Martinez (2014) stressed that although the function of the environment is more explicitly explored in debates about affordances, the environment is no less important for scaffolding, in which material and cultural factors are situated in the environment and can also trigger action. Therefore it may be argued that there is a similarity between scaffolding and affordance and that it stems from the interrelation between perception and action. In this view affordances offer possibilities for individualisation of possible actions, hence they can scaffold actions. On the other hand, scaffolds are generally

understood as temporary, as resources of processes of development, while affordances are assumed to be objective aspects of the environment which might change in distinct relations between individuals and environments (Estany & Martinez, 2014).

In order to gain better understanding about distinct aspects of scaffolding in technology-enhanced classrooms, several educational experiments were designed. For instance, Azevedo, Cromley, and Seibert (2004) developed an experiment where undergraduate students participated in three different conditions: Hypermedia environment with adaptive scaffolding (AS), fixed scaffolding (FS) and no scaffolding (NS). Fixed scaffolds, or static scaffolds (Sharma & Hannafin, 2005) are static supports which are not adjustable to fulfil individual learning needs. They offer guidance without any level of personalisation so that all learners receive the same degree and quality of scaffolding instruction based on significant subject-matter learning strategies (Sharma & Hannafin, 2005). On the other hand, adaptive or dynamic scaffolding supports learners' self-regulated learning since it is adjusted to fulfil students' learning needs (Sharma & Hannafin, 2005). According to Sharma and Hannafin (2005), it emphasises a fine balance between offering assistance while continuing to encourage a learner's own self-regulatory behaviour (e.g., planning, setting learning goals, and monitoring their emerging understanding). Results from Azevedo et al. (2004) also provided evidence that adaptive scaffolding led to a substantial increase in learners' understanding of the learning topic and was more effective than when either FS or NS were used.

The literature also reveals a shift in thinking about scaffolding in interactive learning environments (Quintana et al., 2004; Reiser, 2004; Tabak, 2004). It considers software tools themselves as scaffolds that can help students learn. Software tools can scaffold learning by modifying the online tasks in such a way that students can complete the tasks that would otherwise be out of their reach or would be overly time-consuming. Reiser (2004) asserts that "the structure of a tool shapes how people interact with the task and affects what can be accomplished" (p. 280). For instance, calculators can perform simple calculations enabling people to prioritise other aspects of the data manipulation tasks (e.g., considering what calculations to combine together to solve a problem) (Reiser, 2004). Similarly, word processors with spelling checks can enable writers to concentrate more on their writing instead of spending time checking spelling in

dictionaries (Reiser, 2004). Considering software tools as scaffolds is controversial, as generally, software is unable to explain how and why certain problems were solved (e.g., word spelling checking system does not describe the grammatical rules behind its suggestion about the text) (Reiser, 2004). In fact Quintana et al. (2004) argue that although software may partly scaffold students' learning it is the presence and interaction of various elements, such as teachers, students, software, curriculum, and other elements of a classroom, that facilitate learning.

In summary, in this section I discussed the diverse ways in which scaffolding can be implemented to meet specific learning goals and related aspects that led to its effectiveness. A key idea in the scaffolding literature is the mastery of knowing when and how a learner's critical thinking can be most efficiently supported. The next section will look at this issue in detail.

2.2 Online scaffolding

Online teachers are often compared to an orchestra maestro or a leader of a band (Dillenbourg, 2008; Heuer & King, 2004; Panda, 2008) who are responsible for effectively leading a series of different musicians (i.e., learners) and play distinct instruments (i.e., scaffolds) in the virtual classroom all at the same time. The present section will briefly introduce the history of online facilitation, presenting some of the pioneers in the theory and practice of online pedagogy.

Salmon (2011) uses the term e-moderation to refer to the variety of roles performed by online teachers or e-moderators (electronic moderators). The author suggests that the fundamental role of the e-moderator is to facilitate human interaction and communication via modelling, conveying, and constructing of knowledge and skills. Furthermore, she devised a five-stage model of collaborative online learning (i.e., access and motivation, online socialisation, information exchange, knowledge construction, and development) that has been widely applied and discussed in distance education research (Salmon et al., 2010; Vlachopoulos & Cowan, 2010).

A. Bischoff (2000) argues that the effectiveness of the online teacher's performance depends on teachers' excellence in (a) being visible online, (b) providing regular feedback, (c) offering high-quality materials, and (d) removing

or minimising obstacles for learner retention. Each of these elements will be discussed in turn below.

For A. Bischoff (2000) visibility in online teaching is related to public messages, modelling and diminishing isolation. In terms of group postings, it is advised that online teachers should reply to individual queries through group postings in the discussion forum. In this way the lecturer-student interaction is seen by the whole class and this helps students feel connected in the virtual classroom. Moreover, the online teacher should model both quality and quantity of postings that he/she requires from students. Regular postings by the lecturer may give the learner a feeling that he or she is part of a collaborative online community. In this way the visibility of the online teacher can promote students' well-being and a sense of belonging, and minimise a feeling of isolation in the online learning environment (OLE) (A. Bischoff, 2000).

Quality *feedback* in online teaching is characterised by frequent, consistent, timely, diplomatic and evaluative feedback (A. Bischoff, 2000). According to A. Bischoff (2000) providing regular and consistent feedback in the OLE can encourage student active participation through questioning beliefs, disagreeing with specific points, and highlighting well-evaluated issues. Due to the absence of physical cues in the asynchronous online discussion (AOD), all nonverbal feedback must be expressed in written messages. Given that an AOD moves fast, timeliness of feedback is crucial to provide learners with guidance and help them learn the content in depth. Thus quality online teaching facilitates and anticipates the discussion, rather than catching up with the postings that have already been fully explored. In some cases if a student is displaying disruptive behaviour in the AODs, a positive and clear feedback expressing that the conduct is inappropriate should be provided. A critical evaluative feedback to individual students is most beneficial when tailored in a way that preserves a student's dignity. Therefore evaluative and substantive online feedback is essential for students since they expect to know where they are in their learning curves and how they should proceed to enhance their performance (A. Bischoff, 2000).

According to A. Bischoff (2000) *offering high quality materials* is fundamental for effective online teaching. In this view online teachers need to design learning management systems (LMSs), thoroughly edit and orderly display educational resources, always considering copyright issues related to them. In

contrast Collis and Moonen (2007) argue that instead of focusing one's attention on what is going to be presented to learners, the focus should be on devising and setting up the tasks that learners will do and contribute to (e.g., task support and assessment procedures). In this view students are encouraged to find information about the content on focus and contribute educational resources as well as produce learning artefacts and share it with the online learning community. These principles characterise the contributing student approach (Collis & Moonen, 2007): "Through the process of their learning activities, the students contribute resources of various types to the course web environment that are built on by all in subsequent learning activities and that result in a contribution that can be used by others" (p. 19). In this approach assignments are not mere documents sent to the lecturer by Dropbox for marking; they are contributions available as learning resources for others (Collis & Moonen, 2007).

Withdrawing obstacles for learner retention is crucial for preventing student attrition. Student attrition usually results from feelings of isolation, fast pace of the online course, competing responsibilities (e.g., family and work duties) and technical issues that function as obstacles for learner participation (A. Bischoff, 2000). Online teacher support is critical to overcome each of these challenges in the OLE (A. Bischoff, 2000).

Hannafin, Land, and Oliver (1999) developed a study about open learning environments, which are defined as spaces that help students' efforts to comprehend their own learning interests (Hannafin, Hall, Land, & Hill, 1994). In their study Hannafin et al. (1999) proposed four main kinds of scaffolding: Procedural, metacognitive, conceptual, and strategic. In her work Stavredes (2011) reinterpreted and adapted these categories to better fit the online learning environment (Stavredes & Herder, 2013).

Procedural scaffolding orients students towards how to use resources and tools in a specific learning environment (Hannafin et al., 1999). For instance, teachers may provide tutoring on systems' functions and features (Hannafin et al., 1999) through an orientation session to show students how to use Adobe Virtual Classroom environment before a synchronous conference takes place in the course. Stavredes (2011) describes three kinds of procedural scaffolds that can support learners persist in learning: Orientation, expectation, and resource scaffolds. An orientation scaffold helps learners comprehend the online course environment

(e.g., description of the general layout of the course, including location of materials, discussion, assignments, mail, grades, etc.). An expectation scaffold supports learners in understanding the expectations for engaging in the course (e.g., faculty expectations statement and netiquette guidelines). Finally, resource scaffolds help learners in identifying processes, resources and tools that will be used during the course (e.g., academic writing materials and library resources).

Metacognitive scaffolding helps learners develop thinking skills to manage their learning (Stavredes, 2011). Some examples of metacognitive scaffolding are advising learners to plan in advance, evaluating students' learning progress and identifying students' learning needs, as well as modelling cognitive and self-regulatory strategies (Hannafin et al., 1999). Planning strategies assist learners to establish learning outcomes, elaborate a plan to help them accomplish the stated course goals and aims, design strategies for effective learning, and administrate the learning tasks in a timely manner (Stavredes, 2011). Monitoring strategies help students track information about their progress, more specifically, if they are on the right track and meeting the stated objectives (e.g., an online quiz can assist students to monitor their understanding of key concepts and ideas) (Stavredes, 2011). Evaluating strategies help students revise learning processes, change plans (based on the outcomes of the planning and monitoring mechanisms) or both (Stavredes, 2011). For instance, asking students to self-evaluate their work against a rubric before submitting their assessment can support them to determine if they have met the grading criteria (Stavredes, 2011).

Conceptual scaffolding guides the learner to think about what to consider, particularly in the case of complex concepts and problems, how to create relationships among concepts and how these relationships produce a supportive structure for online learning (Hannafin et al., 1999). Suggesting specific tools at particular stages of problem solving, offering explicit hints and prompts as needed, and providing conceptual maps are examples of mechanisms for this type of scaffolding (Hannafin et al., 1999). "Advance organizers, study guides or questions, definitions, graphical organizers, outlines, and hints are examples of conceptual scaffolding strategies" (Stavredes & Herder, 2013, p. 165). For instance, advance organisers foster creation of schemata to help learners connect prior knowledge with new information (e.g., a summary of a reading containing a higher level of abstraction, generality and inclusiveness) (Stavredes, 2011).

Strategic scaffolding helps learners accomplish specific learning tasks, particularly focusing on multiple alternative perspectives (Hannafin et al., 1999). Stavredes (2011) refers to strategic scaffolds as just-in-time strategies for facilitating an individual's higher level of understanding and performance. Probing questions can offer explicit strategic hints for students who need a place to start. They can also be applied in the middle of a problem-solving task to support students to overcome barriers to complete an activity (Stavredes, 2011). The online environment is challenging for monitoring learning as one cannot visually see the students; therefore online teachers are forced to rely on clues from learners to identify learning difficulties (Stavredes, 2011). Online discussions can reveal learners' difficulties, thus closely evaluating dialogues can support online teachers to diagnose issues and offer strategic support (Stavredes, 2011).

In summary, this section briefly discussed the history of thinking about online scaffolding in order to acknowledge the pioneers of online teaching and contextualise the place of the current study. A key idea brought by this section was that effective online teaching depends on the teacher's skillfulness in being visible online. Discussion of the e-moderation concept and the distinct types of online scaffolding set the scene for the analysis of scaffolding actions that are expected in OLEs.

2.3 Scaffolding actions

Scaffolding online learning is a complex and demanding set of activities. This section will discuss a number of scaffolding actions that are taken based on constant attention on the pattern of student participation. First, scaffolding actions related to different roles of online teachers/facilitators will be discussed. Subsequently, studies that considered time as an important variable when performing scaffolding in OLEs will be examined.

Collison, Elbaum, Haavind, and Tinker (2000) view online teachers as facilitators of learning and have categorised teachers/facilitators roles into three functional categories where each encompasses a number of online scaffolding actions: When facilitators act as *guides on the side*, they work as co-learners who introduce a variety of interventions into the group online dialogue, progressively leading co-learners towards learning outcomes. Specific strategies for effectively guiding participants to deeper conceptual levels are suggested. For example,

according to the authors, lecturers should focus on comments and dialogues, both tangential and essential, to encourage students to go deeper in their learning and take intellectual risks in sharing their unique ideas. Other strategies may direct students' attention to points of tensions in the discussion in order to prompt students to clarify their reasoning, explore their philosophical perspectives, and focus the discussion on relevant aspects of the topic. Another important strategy suggested by the authors is to coach individuals in a new skill (e.g., modelling appropriate ways for responding to peers' contributions).

The facilitator as instructor or project leader designs a regular and manageable feedback loop; separates content from process, and peer scaffolding. Collison et al. (2000) corroborate A. Bischoff's (2000) assumptions about the importance of visibility for fostering student well-being in OLEs. The designing of a regular and manageable feedback loop (Collison et al., 2000) via discussion forums, specific discussion threads (e.g., Question and Answer area) and private e-mail communication between facilitators and students encourages open communication and prevents feelings of isolation and frustration. In addition, creating specific discussion areas for dealing with issues that are process-related (e.g., assignments) may help facilitators to address them in a timely fashion (Collison et al., 2000). Finally, the facilitator who is positioned on the side, focusing and guiding multiple dialogues between students, may facilitate peer scaffolding. When facilitators invite participants to share the role of moderation, they are stimulating students to dig deeper in the subject matter and foster a culture of feedback-friendly environment (Collison et al., 2000).

The role of *facilitator as a leader of group process* encompasses a number of strategies that teachers should perform or appropriately delegate to students in order to help students' progress (Collison et al., 2000). Firstly, leading community-building tasks, such as composing an introductory message, represents one of the first contacts that a teacher has with students. If it is a compelling post and there is a critical mass of students in the course, participation and community building will start to emerge. Secondly, offering "virtual hand holding" or technical support to the student who experiences difficulties in the digital environment is also a relevant group facilitation strategy. Thirdly, recognising the diversity of participants' backgrounds and interests is crucial for building relationships in the virtual classroom and for creating a safe environment.

Students have varied levels of computer skills and technical experience, thus to be aware of individual digital skills would help instructors to design adequate LMSs (Collison et al., 2000).

Additionally, displays of personality, graphics and humour are paramount for moderating online dialogue (Collison et al., 2000). For instance, introducing oneself with a personal photograph taken at work, or during holidays with family, or talking about one's hobbies establishes a sense of community. Personal anecdotes or simple descriptions of everyday situations shared by the facilitator in postings also help students to identify and connect with the online teacher. Another essential point is to keep a nurturing pace of responding. For example, the instructor is continuously aware of which students' contributions are not time-sensitive and which request a fast turnaround, as well as when it is better to remain silent and give space for student leadership (Collison et al., 2000).

Hogan and Pressley (1997) described an extensive set of *scaffolding actions* that illustrates a process for facilitating learning over time. Pre-engagement takes place when the lecturer selects a suitable task by foreseeing students' difficulties, needs and strategies and by taking into account curriculum outcomes. Following this stage the lecturer moderates the establishment of shared goals, acknowledging that motivation is an essential element for student learning. It is important that these aims are meaningful for learners. Identifying students' learning needs requires disciplinary knowledge and a sensitivity to the students' present knowledge. With this information in mind, the instructor is expected to provide tailored support through questioning, hinting, prompting, coaching, modelling ideal practice, direct instruction and dialogue. Equally important in this process is to keep pursuing the shared goals by maintaining the focus on the task, by soliciting clarification, asking questions, praising efforts, and so on. Feedback can be provided by summarising current constructed knowledge, indicating behaviours that conducted to such progress, and clearly state the concept behind each task. Another essential point is to try minimising frustration and risk through creating a safe environment where mistakes are appreciated as part of the learning process. Finally, supporting internalisation, independence, personalisation and generalisation to other contexts will help students become less dependent on the instructor.

In a similar manner, Cowie and Khoo (2014) detailed different scaffolding actions that a lecturer embodied in order to develop a learning community. The lecturer's pedagogical, social, managerial, and technological roles frequently intersected and unfolded at distinct points in time and in several configurations to meet a myriad of students' needs: Conceptual, intellectual, social, and/or emotional. In Cowie and Khoo's (2014) study, the lecturer used the following scaffolding actions, a missed teaching-learning opportunity regained, providing just-in-time (contingent) resources, nurturing the dynamics in the learning community, shifting from the individual to the collective when giving feedback, and transferring the responsibility for supporting learning.

This section examined distinct ways that online teachers use to scaffold online learning. As Collison et al. (2000) asserted, "direct feedback is the most constructive type of instruction" (p. 41), thus combining answering questions and positive reinforcement with probing questions may lead students to deeper inquiry. Nevertheless, the online teacher is not expected to scaffold students all the time, instead the scaffolding needs to fade over time to allow students to be agents of their own learning.

2.4 Fading scaffolding

Fading of scaffolding encompasses the gradual withdrawal of the teacher's control and support as a function of the learner's growing mastery (Pifarre & Cobos, 2010). It allows learners to develop metacognitive strategies for higher-order tasks while fostering learner autonomy (Sharma & Hannafin, 2005).

According to Pea (2004), the term "fading" of the scaffold was introduced by Collins, Brown, and Newman (1989): "Once the learner has a grasp of the target skill, the master reduces (or fades) his participation, providing only limited hints, refinements, and feedback to the learner, who practices successively approximating smooth execution of the whole skill" (p. 456). Pea (2004) points out that if the support does not fade, one should think of the activity as distributed intelligence rather than scaffolded performance.

Tharp and Gallimore (1988) indicated that the student's objective in the scaffolding relationship is to reach metacognitive control of learning. Therefore at the outset, the student executes a task along with the expert's external "speech" (Tharp & Gallimore, 1988). As scaffolding fades the discourse becomes an

internal dialogue with oneself and the student becomes capable of regulating his/her learning without permanent external support (Tharp & Gallimore, 1988). For instance, lecturers in a fully online undergraduate course in a New Zealand university acknowledged the importance of fading support over time (Forbes, 2012). The lecturer affirmed that students' postings are scaffolded more extensively at the start of the course, reducing it somewhat as the course progressed in order to foster learner autonomy, interdependence, and leadership (Forbes, 2012).

In summary, fading scaffolding in virtual classrooms can be a complex task. The lecturer is expected to contribute and show visible presence and steer students' thinking to deepest learning, and at the same time step back to give students space to be independent learners.

One of the aims of my study was to build on The University of Waikato's studies to extend knowledge about tertiary online teaching and learning. In order to contextualise this study, the subsequent section will examine background studies developed locally.

Several studies at the University of Waikato explored online teaching and learning in communities of learners, multiple literacies, and research methods (Archard, 2012; Forbes, 2012; Khoo, 2010).

Archard's (2012) study of an online teacher education graduate programme revealed that pedagogical online tools can support a sense of belonging and facilitate social presence in an online learning community. However, different participants perceived different affordances of online tools for encouraging this sense of belonging and social presence. Archard's (2012) findings emphasised the importance of the lecturer to take into consideration different affordances of online tools that may be perceived and distinct actions that students might display.

Forbes (2012) investigated lecturers' and students' perspectives on AODs in an undergraduate teacher education course. Forbes's (2012) results showed that students expected their lecturers to be present and use questioning to create momentum in discussion while challenging and acknowledging students' contributions. Students also expected lecturers to provide forward feedback and summarise the content. On the whole lecturers revealed that they monitored online

dialogues to evaluate whether and when to participate. They also highlighted that this was a critical skill which demanded experience to master.

According to Khoo (2010), participation in virtual classrooms is accomplished through the ways members of the online learning community (OLC) interact with one another, that is, via the types of roles they take on. In her investigation of a fully online graduate research methods course, the lecturer and students took on different roles — pedagogical, managerial, social, and technological. Each role embodied distinct responsibilities, teaching-learning strategies and contributed to different objectives of the OLC. Khoo's (2010) findings suggested that lecturers could contribute to OLCs by implementing the four identified roles to meet learners' intellectual, administrative, social and technical needs. Another key outcome from this study was that the nature of participation in the OLC is continually changing as the community is shaped by the development of its participants and in return it shapes the development of its participants.

These studies were examined in terms of what aspects they shed light on regarding scaffolding online learning. Their findings point to the relevance of investigating the perception of affordances, lecturers' and students' perspectives and changing participation patterns in online courses. The next section will discuss research gaps found in the scaffolding literature.

2.5 Research gaps

The literature on online scaffolding points to some lacunas in the field. According to Pea (2004), further research on how and why each kind of scaffolding works should enhance the understanding of both those who scaffold and those who are being scaffolded. Likewise, Pifarre and Cobos (2010) point out the need for extended scholarship on how and which metacognitive learning strategy evolves in OLEs and how teachers and students can scaffold these processes. Moreover, Visser (2007) indicates that more research is needed about students' and lecturers' perceptions of learner support.

Additionally, Sharma and Hannafin (2005) proposed a research agenda regarding online scaffolding, which includes the examination of the factors that trigger contextualisation and personalisation of scaffolding, research on peer scaffolding in OLEs and the optimal level and kind of scaffolding necessary to

promote effective expert-learner interactions. Moreover, these authors suggest future scholarship about the ideal format and sequence of scaffolding, along with investigations of individual and collective strategies for scaffolding critical thinking.

In sum, this literature review aimed to provide a thorough understanding of scaffolding and its application in online learning environments. The analysis of previous studies in online scaffolding helped to identify key principles and practices used and discussed by educators and researchers. In addition, the last section indicated research gaps that point to the need to further investigate online scaffolding.

Chapter 3: Methodology

This chapter describes the research methodology and presents discussions about the following issues: (a) rationale for research design, (b) theoretical framework, (c) explanation of research sample, (d) summary of research design, (e) methods of data collection, (f) analysis of data, (g) ethical considerations, (h) issues of trustworthiness, and (i) limitations of the study. The chapter ends with a concluding summary.

The purpose of this case study was to understand how lecturers and students in a fully online educational leadership post-graduate course scaffold learning over time. The findings were envisioned to provide better comprehension of scaffolding and help educators to further inform design and facilitation of online masters programmes in educational leadership and potentially in other disciplines as well. The study addressed four research questions: (a) How do lecturers understand online scaffolding? (b) How do students understand online scaffolding? (c) What types of online scaffolding do students in this course expect? (d) What types of online scaffolding are implemented by the lecturer and students in this course?

3.1 Rationale for mixed-method research design

The arena of distance education is a complex one because it consists of multiple constructs from an array of academic fields in addition to its own foundational constructs, concepts and theories (Saba, 2014). Even though research in distance education can be tracked back to the 1930s, when the effectiveness of educational radio programmes were investigated, it is only now that research in distance education is starting to display the maturity that is needed for such a complex and multifaceted field (Saba, 2014). According to Saba (2014), “evidence of this maturity can be found in rigorous quantitative and qualitative methods of inquiry that researchers have begun to apply in their studies in recent years” (p. 151).

Mixed-method research is grounded in the fact that the world is not exclusively qualitative or quantitative but a mixed one, although the researcher

may perceive that the investigation is likely to have a predominant inclination to, or requirement for numbers or qualitative evidence (Cohen, Manion, & Morrison, 2011). John Creswell, in research that asked several current leaders in the field how they conceptualised mixed methods research, stated the following: “Mixed methods research is a research design (or methodology) in which the researcher collects, analyses, and mixes (integrates or connects) both quantitative and qualitative data in a single study or multiphase program of inquiry” (Johnson, Onwuegbuzie, & Turner, 2007, p. 119). Onwuegbuzie and Leech (2005) corroborate this perspective, suggesting that the constructs “quantitative” and “qualitative” would be better substituted for confirmatory and exploratory research.

This study used a convergent mixed methods design where both qualitative and quantitative data were collected concurrently, the results of the separate analyses were subsequently merged, and then the combined results were interpreted to address the research questions (Creswell, 2012). The reasoning that underpinned this research design selection relied on the fact that one data type strengthens and helps to overcome the weaknesses of the other type of data (Creswell, 2012). For instance, quantitative records from many participants offer substantial evidence to counteract the limitations of qualitative documents from a few individuals (Creswell, 2012).

Additional rationale for choosing a mixed-method research design in this investigation was based on the importance of data triangulation for generation of valid and reliable findings. Creswell (2012) defines triangulation as the process of corroborating evidence related to distinct groups of individuals and/or instruments of data collection. In this study both triangulation types were used, that is, participants consisted of lecturers and students, and different research methods (i.e., surveys, interviews, and observations) were employed.

Although both qualitative and quantitative data were collected and analysed, priority was given to qualitative interpretation of the data for a range of reasons. Firstly, the main purpose of this research was to explore the perspectives of lecturers and students in an educational leadership course, rather than to predict the outcomes of this investigation. Secondly, since the number of participants was rather small for enabling major inferential statistical analysis, emphasis was given to qualitative discussion of the findings, which was enriched with quantitative

components. In addition, the majority of the instruments (e.g., interviews, online discussions) were designed to collect a substantial amount of qualitative data.

According to Saba (2014), mixed method research in distance education is generally characterised by data that reflect a moment in time. Thus a simple snapshot of evidence cannot encompass the emergent qualities of learners, leaders, or other participants (Saba, 2014). In order to address this drawback in the research of distance education, this study collected data over a period of time, which allowed exploring emergent lecturer-student and student-student interactions in regard to online scaffolding.

3.2 Case study

Aligned with a mixed-method research design, this study pursued to develop a case study in order to explore how lecturers and students perceive, experience and enact scaffolding in a fully online educational leadership course. Thomas (2011) emphasises that a case study is not a research tool by itself but a focus, for a certain amount of time, on the case. The object of study is observed from many and diverse angles in order to “paint” a rich and big picture, replenished of authenticity (Thomas, 2011). Thomas (2011) proposes the following definition for case study:

Case studies are analyses of persons, events, decisions, periods, projects, policies, institutions or other systems which are studied holistically by one or more methods. The case that is the subject of the inquiry will be an instance of a class of phenomena that provides an analytical frame — an object within which the study is conducted and which the case illuminates and explicates. (p. 23)

The literature on case study research also indicates common concerns regarding its application. Lack of rigor, represented by the absence of implementation of systematic procedures or the analysis of equivocal evidence, may impact the direction of results and conclusions (Yin, 2014). In addition, it is not possible to draw generalisations from a single case study (Thomas, 2011).

Siegel (2006) states that epistemology defines what counts as evidence in research. According to Siegel (2006), to critically evaluate the epistemology of a particular community of practice, several aspects must be considered, including the use of research methods that reliably produce trustworthy evidence; data that is sufficient in quantity, quality, and variety to warrant the findings it yields; the collection of data involving appropriate sample size; the control of subject and experimenter bias; the epistemology in question must have the conceptual framework to afford sufficient explanations of the phenomena it addresses; and finally it needs to take into consideration counter-evidence and criticism. Lincoln, Lynham, and Guba (2005) corroborate this last feature, stressing the importance of making all stakeholders' viewpoints, perspectives, claims, concerns and values evident in the research writing. According to these authors, the omission of participant voices represents a form of bias.

This section discussed the rationale for the selection of mixed-method research design in this study. A convergent mixed-method research allowed for the triangulation of data, which was mainly interpreted qualitatively. This study aimed to develop a case study on online scaffolding using the lenses of the theory of transactional distance (Moore, 1993, 1994, 1997, 2013), which will be described in the following section.

3.3 Theoretical framework

3.3.1 The theory of transactional distance

Transactional distance theory (TDT) first emerged in 1972, during the World Conference on the International Council for Correspondence Education when researchers and practitioners discussed the need to define distance education (Moore, 2013). Through a content analysis of several hundreds of courses and literature, three sets of "macro-factors" (i.e., course structure, dialogue and learner autonomy) were generated (Moore, 2013).

At the time Moore's goal was to develop a global and descriptive theory able to accommodate various types of distance education (Moore & Kearsley, 2012). The TDT, as we know it today, is the result of a combined work of Otto Peters, who saw distance education as a highly structured industrial system, and Wedemeyer (1971) approach of a more student-centred, interactive relationship

between student and teacher (Moore & Kearsley, 2012). In this view, through a common pedagogical framework, any distance education course could be related to one another (Moore & Kearsley, 2012).

3.3.2 Transactional distance

The idea of transaction has its origins in the works of Dewey (Dewey & Bentley, 1949) and can be understood as the interplay between the environment, the individuals and the patterns of behaviours during an event (Moore, 1993, 1997; Moore & Kearsley, 2012). Shearer (2009) suggested alternative definition of transaction in which transaction is described as the exchange of intellectual ideas between individuals in an educational context. According to Moore (Moore, 1993, 1997; Moore & Kearsley, 2012), the transaction in distance education unfolds between teachers and students in an environment characterised by separation, in terms of space and/or time of teachers from students. This separation produces a psychological space where ‘potential misunderstanding’ between teachers and students may occur (Moore, 1993, 1997). In addition, transactional distance is a variable quantity derived from the fluctuating interplay between dialogue, course structure, and learner autonomy (Peters, 1998).

Transactional distance is individually perceived and experienced in distinct forms in different cultural and educational settings (Giossos, Koutsouba, Lionarakis, & Skavantzios, 2009), including face-to-face contexts (Moore, 1993, 1997). Such transactional distance must be reduced through specific instructional design procedures and by facilitation of interaction between teachers and learners (Moore & Kearsley, 2005). These transactions are affected by three elements: The degree of structural flexibility of the course, the dialogue between teacher and student, and the autonomy by which learners exercise control over their learning (Moore 1993, 1997).

3.3.3 Course structure

Structure refers to the rigidity or flexibility of the course’s goals, teaching strategies, and assessment. It constitutes the extent to which a course design can be adjusted or be responsive to each student’s individual needs and interests (Moore, 1993, 2013). According to Moore and Kearsley (2012), quality structure reflects the thorough design and organisation of structural elements. The nature of

structure in a course is mainly determined by the communication medium adopted, course philosophy, emotional characteristics of teachers, learners' personalities, and the limitations inherent in educational institutions (Moore, 1993).

In order to determine the extent of structure needed and to design appropriate structured presentations and interactions, online teachers need to dedicate time and creative effort, and develop an understanding of the students' learning interests and needs (Moore, 1993, 1997). In addition, Moore (1993, 1997) describes six factors that teachers need to take into account when structuring distance education programmes: Presentation of the content, stimulating learner motivation, encouraging analytical thinking, academic advising and counselling, providing opportunities for students to practise skills and applying knowledge through assessment, and organising tasks that foster student production of knowledge (Moore, 1993, 1997). Jung (2001) expanded these structure variables to include content expandability, content adaptability, and visual layout. These additional structure variables reflect the flexibility and adaptability of content structure due to the development of internet and hyperlink technology. Drennan, Kennedy, and Pisarski (2005) findings showed that the course structure has a considerable effect on student satisfaction; the more flexible the course structure, the higher student satisfaction and greater learning.

3.3.4 Dialogue

The second element, dialogue, describes a specific type of interpersonal relationship where each individual in the exchange of ideas builds on remarks of the other in an interplay of words and actions (Moore, 2013; Moore & Kearsley, 2012). The concept of dialogue is used to describe an interaction or series of interactions that are positive, purposeful, constructive and respected by each individual engaged in the dialogue (Moore, 1993, 1997). In this view dialogue highlights the synergistic nature of the relationship between individuals towards deeper understanding (Moore, 1993, 1997).

The extent and nature of dialogue in any course is influenced by various factors, such as the structure of the course in general and the medium of communication in particular (Moore, 2013). Other factors that influence dialogical interactions in a course are the discipline taught, the course's philosophy, the educator's personality, the capacity of a student to efficiently take

part in the discussion, and cultural and language dissimilarities among teachers and learners (Moore, 1993, 2013).

Proponents of the TDT argue that the transactional distance is a function of dialogue and structure, in which as structure increases, transactional distance increases and dialogue decreases; conversely, as structure decreases, dialogue increases, and transactional distance decreases (Moore, 2013; Shearer, 2010). The value of increased dialogue, according to these authors, is that it promotes a greater sense of connectedness among students during the learning process, reducing the likelihood of miscommunication of ideas.

3.3.5 Learner autonomy

The third element of the transactional distance theory refers to learner autonomy. Learner autonomy is the extent to which the student determines learning experiences and outcomes, and makes assessment decisions in the teaching and learning relationship (Moore, 1993, 1997). Moreover, this construct encompasses a student capacity to formulate a personal study plan, to search for learning resources in his/her workplace or community spaces, and self-assessment (Moore, 2013; Moore & Kearsley, 2012). According to W. Anderson (2013), Moore's theory of transactional distance suggests that learners with a greater degree of autonomy would feel comfortable in courses where transactional distance was greater whereas learners who were less autonomous in their learning would prefer courses where the blend of structure and dialogue resulted in less transactional distance.

A number of studies have criticised the theory of transactional distance and its macro-factors (Dron, 2005; Dron, Seidel, & Litten, 2004; Gorsky & Caspi, 2005). For example, according to Dron (2005), TDT theory is 'fuzzy' in the sense that its definitions of dialogue and structure are permanently evolving. In addition, findings from Dron et al. (2004) reveal an exception in the TDT, that is, the possibility of a blended course to have both high dialogue and high structure, which challenges the inverse relation between these elements in Moore's theory. Gorsky and Caspi (2005) analysed six empirical studies that aimed to support TDT. According to the authors, three of the examined studies supported the TDT but lacked validity (W. R. Bischoff, Bisconer, Kooker, & Woods, 1996; Bunker,

Gayol, Nti, & Reidell, 1996; Saba & Shearer, 1994). The other three studies (Chen, 2001a, 2001b; Chen & Willits, 1998) offered limited support to the theory.

Nevertheless, these studies provided important questions about past research, inspiring further contributions towards the evolution of the theory (Horzum, 2011; Park, 2011; Sahin, 2008; Shearer, 2009). Among these studies, there are several that attempted to develop tools for measuring the elements of Moore's theory, and provide more refined conceptualisations for his macro-factors. For instance, Horzum (2011) developed a scale to measure transactional distance, which contained 38 items and five subfactors. Similarly, Park (2011) proposed four kinds of mobile learning with distinct levels of transactional distance that support both individual and social aspects of learning. A study by Sahin (2008) investigated the relationships between students' characteristics and their perception of online learning and satisfaction, and found that the three elements of TDT may be associated with Kolb (1984) two dimensional perspectives of individual learning styles (i.e., abstract conceptual and concrete experience). Recently Shearer (2009) developed a scheme for categorising dialogue based on the work of Burbules (1993). The classification scheme consists of dialogue towards understanding, dialogue towards conversation, and passive/silent (Shearer, 2009).

The importance of the theory of transactional distance resides in the fact that it addresses teaching and learning needs in distance education (Moore, 2007). Furthermore, the TDT has raised questions regarding the notion of psychological separation and potential misunderstanding in communication spaces in distance and face-to-face education (Shearer, 2009). Hence, TDT can be used as a tool to evaluate and improve distance education courses, and to increase dialogue and learner autonomy (Gokool-Ramdoe, 2008; Peters, 2007; Reyes, 2013; Tait, 2003). The theory can also have an application beyond measuring transactional distance; for example, TDT can be used to identify at which level (cognitive, meta-cognitive, or affective) educational intervention should occur (Gokool-Ramdoe, 2008), and it can be used to determine "whether such intervention should affect needs analysis processes; design and development issues; delivery concerns; interaction or teaching/learning transaction; implementation; context, and evaluation" (Gokool-Ramdoe, 2008, p. 15). Moreover, TDT can offer a sound understanding of what constitutes quality in any element of Moore's theory, and

this robust understanding can contribute towards policy development (Gokool-Ramdoos, 2008).

I selected the theory of transactional distance as a theoretical approach in this case study for a number of reasons. I believe that Moore's three elements (i.e., course structure, dialogue between lecturer and student, and learner autonomy) are essential factors that underpin online scaffolding. Moore's theory also provides a valid framework for exploring teaching and learning practices in an online course in a way that may potentially point to change for further enhancement of online pedagogy. Moreover, since past studies in distance education at University of Waikato used other 'popular' theories (e.g., activity theory, community of inquiry framework), I believe that the use of TDT would further contribute to deepening our understanding of online teaching and learning. With this in mind, the TDT was used to enrich the interpretation of my research findings, along with insights from the broader distance education literature.

This section presented the theoretical lens used in this case study. The origins of the transactional distance theory were explained, along with the notion of transaction distance and the three components of this framework. The next section will delve into the research sample of this study.

3.4 Research sample

3.4.1 Participants

The research participants were purposefully selected following a specific set of requirements necessary for the implementation of this study. Since the main aim of this study was to analyse scaffolding in a fully online course to understand how online scaffolding unfolds over time, the need for the course to be delivered fully online was paramount when considering the site-specific nature of this research. Because there are few studies that looked into distance education at a post-graduate level (Archard, 2012; Falloon, 2011; Gedera, 2014; Khoo, 2010), I searched for a post-graduate course where lecturers were willing to have their course as the educational context of this study. Also, courses where the content is not directly related with the distance education field are potentially more likely to need information regarding online facilitation than those that are carried out by researchers in e-learning. Finally, as the sample size represents a significant factor

when undertaking quantitative analyses, my selection was confined to the masters of education level courses, which had a greater number of enrolments. At University of Waikato, at the graduate level, there are three courses that met these criteria. Research methods, which is an obligatory course for the master of education degree; e-learning disciplines; and educational leadership courses. As the research methods and e-learning courses were the educational contexts of past studies (Falloon, 2011; Gedera, 2014; Khoo, 2010), I selected an educational leadership course as the context of my investigation.

3.4.2 The course

The educational leadership course at the University of Waikato is delivered entirely via Moodle, the learning management system used by the University of Waikato. This course is part of an array of subjects that are offered by the Educational Leadership Centre in the master of educational leadership degree. This centre was established in 1991 and over the years it developed a number of activities (e.g., seminars, workshops, conferences) in the pursuit of “excellence in the provision of research, development and support in professional leadership for educators nationally and internationally” (University of Waikato, para. 1, 2015).

The educational leadership programme at University of Waikato is based on the engagement with contemporary understandings of leadership, and it fosters a critical emancipatory perspective towards individual and collective praxis for social justice (University of Waikato, course philosophy, 2012)¹. In this programme educational leadership is conceived as not only being a leader but also modelling relational sensibilities in the lecturer-student relationships in and beyond academic courses (University of Waikato, course philosophy, 2012). The core value of the courses resides on the experiential and contextual nature of educational leadership, both in New Zealand and internationally (University of Waikato, course philosophy, 2012).

Such rationale has implications for learners’ and lecturers’ experiences, the organisation of the teaching team, as well as pedagogy and research across the leadership courses (University of Waikato, course philosophy, 2012). The

¹ The course philosophy is not an obtainable and publicised document, and was provided by lecturers as a legitimate evidence of the educational philosophy that characterises the educational leadership programmes within the Faculty of Education.

academic experience is described as a continuous and unfolding storyline, in which planned and emergent contextualised themes are dialogically embraced (University of Waikato, course philosophy, 2012). More than one lecturer commonly facilitates the educational leadership courses in order to bolster the intentional, cultural, emergent, and experiential nature of learning (University of Waikato, course philosophy, 2012).

The pedagogy of these educational leadership courses encompasses the concepts of *te kotahitanga* (community), *aroha* (compassion), *kaitiakitanga* (stewardship) and *rangatiratanga* (leadership) (University of Waikato, course philosophy, 2012). Such pedagogy is responsive to the learners' experiences and needs and value narratives as a tool for fostering critical inquiry (University of Waikato, course philosophy, 2012). Finally, lecturers and learners through continuous dialogue and collaboration undertake research where *Kaupapa Maori* and other emancipatory methodologies are encouraged (University of Waikato, course philosophy, 2012).

3.4.3 The lecturers

Two lecturers who are experts in their fields and have been teaching most of their careers, teach the educational leadership course once a year. One of the lecturers (Lecturer 1) has been teaching online for more than a decade and the other is relatively new to the field of online teaching (Lecturer 2). For ethical reasons, throughout this thesis, I will refer to these two lecturers as Lecturer 1 and Lecturer 2. The lecturers co-taught the course according to their respective areas of expertise. The four modules of the course were divided between them, in which three modules were taught by Lecturer 1 and one module was taught by Lecturer 2.

3.4.4 The students

Initially there were 21 students enrolled in this paper. One student dropped out at the start of the semester which decreased the total number of students to 20, from which 14 provided signed informed consent to take part in this study. However, only 11 students answered the start-of-course online survey, which enquired about their demographic information. In the sample (N=11) there were seven NZ European, two Maori, and two students from more than one ethnic group. In terms of gender, six students were female and five students were male. Considering their

age groups, two students were between 25 and 34 years old; five students were among the 35–44 year olds, and four students were in the 45–54 years age group. In terms of teaching experience, three students had been teaching for 5–10 years, whereas eight students had been teaching for more than 10 years. Lastly, three students (Student 3, 4, 11) worked in primary schools; four students taught in secondary schools (Student 1, 2, 6, 10); two students (Student 8, 9) worked in primary and secondary schools; Student 5 worked in primary, secondary, and tertiary education sector, and Student 7 worked in the early childhood, primary, and tertiary education sector.

This section has briefly described the research sample of this study, which had as the educational context a post-graduate educational leadership course. The participants of this study were two lecturers and 14 students. In the next section, I will describe the research design.

3.5 Research design

Several steps were taken during the research design process. The first step was to refine the research questions, develop tools to address these questions and procedures based on a thorough literature review about online scaffolding. This initial planning resulted in the application for approval to the Human Ethics Committee of the University of Waikato. Research tools (i.e., interviews and online surveys) were refined based on a meta-analysis of recent literature as well as on feedback from the supervisor and volunteers. Namely, the first online survey was piloted by six volunteers (three graduate students and three PhD candidates) who provided helpful comments. Once the research project was approved by the Human Ethics Committee, letters of invitation, information sheets and consent forms were sent to the research participants.

Since one of the objectives of this study was to explore the potential shift in scaffolding activities in online discussions over time, data were collected at the beginning and at the end of the semester. At the start of the course, data were collected with the view to investigate lecturers' and students' perspectives on, and past experiences with online scaffolding.

Lecturers were interviewed two weeks prior to the commencement of the course in order to explore their views about online scaffolding and teaching practices they use in the online classroom (questions are in Appendix A). In

addition, one of the lecturers kindly offered to spend more time to walk me through the course dynamics and its outline. Interviews took approximately 60 minutes and were audio-recorded.

Student surveys were loaded into LimeSurvey software, which generated a hyperlink that was sent, together with an invitation to participate in the study to all students in the course via the course's Moodle page. The start-of-course online survey focused on students' perceptions and practices of online scaffolding in past courses and expectations of their lecturers' online teaching practices in the beginning of the present course (see Appendix B). Students were also asked to provide demographics information. It took students approximately 15 minutes to complete the survey.

The main objective of looking at the online discussions was to observe the types of online scaffolding enacted by lecturers and students. The discussion log from the third week of forum discussions was sampled and analysed according to a categorisation scheme for online scaffolding, which was developed based on a review of current literature in distance education and scaffolding (Appendix C). The third week was selected following the suggestions given by one lecturer, who informed me that students generally would take up to two weeks to effectively enrol in the course and familiarise themselves with the dynamics of the course.

The second phase of data collection implemented the same research tools with a different focus: Exploring lecturers' and students' reflections on online scaffolding types undertaken during the semester. In addition, based on the emerging findings from phase 1, follow-up questions were developed with the purpose of extending earlier findings from phase 1.

The lecturers were interviewed again (see Appendix D) after the last week of the course with the objective of uncovering possible changes in their teaching practices and perspectives over the duration of the course (Khoo, 2010). Questions were diverse and enquired about teaching presence, use of interactive technologies and feedback.

In week 11 students were asked to complete an end-of-course online survey (Appendix E), concentrating on their perceptions about the types of online scaffolding used by themselves and the lecturers during the course. At this time the online survey hyperlink was sent to students via their personal e-mails in order to avoid disrupting the other students who opted out of this research. This second

survey was designed to explore students' perceptions about online support experienced and suggestions for enhancing online scaffolding in this course.

A second online discussion log was collected for examination of lecturers' and students' interactions regarding online scaffolding at week 11. The purpose of collecting a second discussion log was to uncover any changes in online scaffolding and to provide a rich description of participants' online interactions.

This section has provided an overview of the research design implemented in this study. The next section will explain each research method in more detail as well as describe the way that each tool was applied in the present study.

3.6 Data collection methods

In general mixed methods are employed due to its strength of relying on both qualitative and quantitative inquiry and diminishing the limitations of both approaches (Creswell, 2014). With that in mind, this study selected a number of distinct research tools, including online surveys, semi-structured interviews, and online discussion logs.

3.6.1 Online surveys

A survey consists of a system for gathering information. It is widely used in the social sciences, marketing, and statistical research (Vehovar & Manfreda, 2008). A contemporary application of surveying is online surveys which represent an effective tool to collect information in a fast and reasonably inexpensive way from a large geographic area (Sue & Ritter, 2007). It encompasses a range of steps, which includes definition of objectives, target population and sampling frame, design of data collection strategies and questionnaires, data collection, management and analysis, and dissemination of findings (Sue & Ritter, 2007).

Online surveys offer a myriad of advantages for an educational researcher. The principal advantages of conducting online surveys are low cost, as there is no need for interviewers or posting paper questionnaires; the possibility of easily implement a larger amount of questionnaires; convenience for participants who fill out the survey when it is convenient for them, less time is required for the data collection; eradication of scanning mistakes; elimination of multiple responses; immediate availability of data, and the possibility of adding skip defaults for irrelevant questions (Heiervang & Goodman, 2011).

One limitation of surveys includes the risk of bias caused by low response rate and or selective answering, e.g., volunteer bias (Cohen et al., 2011; Heiervang & Goodman, 2011). Another limitation may be its demanding nature in terms of design, development, programming, testing and modification time, as well as initial contact time and follow up time (Cohen et al., 2011).

In this study both online surveys were piloted with volunteers. Based on their feedback, several changes were made. In order to avoid coercion, none of the questions were mandatory questions, and answer options such as ‘not applicable’ were included. Each survey was open for two weeks.

The participants were invited to complete the first online survey through a posting in the news forum on Moodle containing a hyperlink that directed them to another screen with the online survey. Two follow-up posting reminders, one each week following the initial invitation, were posted in the news forum asking students who did not have the chance to do it to complete the online survey. A total of 11 students responded the start-of-course survey. Only participants who completed the first survey were invited to complete the end-of-course online survey via personal e-mails that had been previously provided to the researcher when students sent their completed informed consent forms. Two friendly reminders were sent to each student who had not completed the survey during the two-week period. The end-of-course survey was answered by 11 students. A total of nine students completed both surveys.

3.6.2 Semi-structured interviews

Kvale (1996) defines ‘inter view’ as an interchange of viewpoints between two people on a topic of common interest. According to Kvale (1996), the qualitative research interview usually provides the view of the world from the participants’ perspectives. Interviews are used for answering research questions that require in-depth information about perceptions, attitudes and meanings. The information collected using interviews, therefore, is not meant to provide generalisable results but to enrich researchers’ comprehension of social actions and processes (Menter, Elliot, Hulme, Lewin, & Lowden, 2011). In this study I used semi-structured interviews, which generally are conducted with specific topics in mind, and questions were formulated based on a literature review (T. Anderson & Kanuka, 2003).

According to T. Anderson and Kanuka (2003), the main advantage of a semi-structured interview is that there is both structure (planned questions) and non-structure (open-ended probes). The interviewer can both predetermine the topic of the information that will be collected (like in a structured interview) as well as act in accordance with the unexpected as it arises (commonly experienced in unstructured interviews). Interviewing allows participants to provide their perspectives using their own words. This helps researchers to better understand the reasons for participants' actions, provides clarification of attitudes, motivation and rationale. Likewise, the interactive nature of the interview allows the interviewer to adjust the questions to address responses and so elicit important information and substantial insights. Therefore interviewees can shape the research and highlight unpredictable and relevant issues through actively exploring the research topics. Interviewees can also provide detailed explanations embedded in contextual information, facilitating comprehension about the elements and processes that affect actions and attitudes. Unlike self-completion questionnaires, interviewers can ask for clarification, which assists them to assemble more precise information, or even to perceive that the questions require refining (Menter et al., 2011).

On the other hand, interviews may present some challenges to the researcher. Cohen et al. (2011) stress that interviews can be time-consuming, awkward for the interviewees, be susceptible to interviewer bias, and vulnerable to issues associated with respondents' fatigue. Moreover, spoken words generally have a residue of ambiguity, independent of how carefully we formulate the questions and how thoroughly we report or code the answers (Fontana & Frey, 2000). As a social interaction, interviews can both enhance and hamper the collecting of information due to personality dissimilarities, power dynamics, and gender and generational differences. Furthermore, there are certain sensitive topics that can be challenging to discuss face to face. It is worth recalling that interviewing requires skill and consciousness from the interviewer to avoid influencing the subjects of the research. Lastly, if the research focus requires a deeper understanding of the topic, it would be necessary to compare a range of interviewees' accounts (Menter et al., 2011).

In this study two semi-structured interviews were undertaken with each lecturer, one at the start and one at the end of the course. In addition, a member

check was implemented with each lecturer to review the accuracy of interviews' transcripts.

3.6.3 Online discussion logs

Brookfield and Preskill (2005) maintain that discussion and democracy are indivisible since both have the same key objective: To nurture and promote human growth. According to the authors, by giving space to as many distinct participants as possible, a 'crowd wisdom' emerges which would have been impossible for any of the individuals to reach alone.

According to Brookfield and Preskill (2005), discussion is an alternately serious and lively dialogue between two or more individuals who share viewpoints and engage in reciprocal critique. The purposes of discussion are several: 1. to help individuals develop a more critically informed comprehension of the topic of interest, 2. to boost individuals' self-awareness and competence in self-critique, 3. to encourage acknowledgment among individuals about the variety of opinions that regularly emerges when perspectives are openly exchanged, and, 4. to support people to take informed action in their context (Brookfield and Preskill, 2005).

Considering that a significant amount of communication which unfolds online is text-based, computer mediated communication (CMC) in forum discussions represents a rich source of data. CMC is characterised by "communications mediated by interconnected computers, between individuals or groups separated in space and/or time" (Lupplicini, 2007, p. 142). The affordances of CMC are manifold: Asynchronous and synchronous communication capacity, great interactivity, and multi-way transmission of information (Lupplicini, 2007). Asynchronous online discussions allow participants to communicate at different times, while collectively constructing a discussion thread (Lupplicini, 2007). This thread is automatically archived and this permanency enables participants to take the time to study and reflect on the topics under discussion and then write meaningful contributions which can foster critical thinking (Lupplicini, 2007).

In this study I observed lecturers' and students' interactions in two online discussions, one at the start and another at the end of the course. Observation is defined as the process of collecting open-ended, direct information by observing individuals and spaces at a research location (Creswell, 2012). My aim was to

collect evidence of diverse types of online scaffolding being enacted by lecturers and students and possible shifts in the nature and extent of instructional support strategies used during the course. The course was 13 weeks long and week three and week 11 were archived for analysis. As 14 students consented to take part in this research, only postings from these 14 students were analysed and reported in this study. Week three had a total of eight discussion threads with 67 postings in total (six lecturer postings and 61 postings written by students). Week 11 consisted of nine discussion threads totalling 64 postings, in which 13 postings were written by the lecturer and 51 by students. As the two online discussions analysed were taught by Lecturer 1, for triangulation reasons, I will present data from both lecturers in the Findings chapter section about lecturers' perspectives about online scaffolding. In the remainder of that chapter, I will address only data from Lecturer 1, whose teaching practices in online discussions may triangulate the data from interviews with the lecturer. It is important to keep in mind that research tools were designed in a way that mentions both lecturers as, in principle, it was thought that lecturers would be co-teaching together during all weeks.

In addition, a third online space was archived and analysed, the Q&A section, for validation of developing insights that were emerging from other data sources. This space was active during the entire course and was designed for students to ask questions of lecturers. To explore this kind of data in depth, I applied content analysis, which I will describe in detail in the next section.

3.7 Data analysis

A systematic data collection, preparation and analysis were implemented in this study. As data collection procedures have already been described in the research design section, the following discussion will be focused on preparing data for content and statistical analyses.

In terms of data preparation, from the outset of this study, the researcher has been writing a reflexive journal in order to develop a thorough record of the research process. In the reflexive journal I have been writing all my impressions, observations and reflections from the research design to the end of the research. In particular, after each interview, online survey and discussions log analysed, I recorded all the additional data and circumstances under which data were collected. In addition, a database with all evidence collected in this study was

created in NVivo, a qualitative analysis software that facilitates the managing, sorting, indexing, organisation, and reorganisation of qualitative and quantitative data (Menter et al., 2011).

Before inputting data in the NVivo database, evidences were checked for accuracy. For instance, after interviews had been transcribed, the recordings were listened to again to correct possible mistakes and transcripts were sent to lecturers for member checking. On the other hand, in LimeSurvey, online survey responses were collated automatically and therefore mistakes arising from faulty data management were averted (Menter et al., 2011). Subsequently, the survey data were exported to SPSS (Statistical Package for the Social Sciences), where data were cleaned and analysed. The data analysis results were subsequently exported into an Excel spreadsheet for graphing. Online discussion logs were organised in Excel spreadsheets and uploaded in the Nvivo software database, where data were coded and analysed.

3.7.1 Content analysis

This study applied qualitative content analysis for processing and interpreting online discussion logs, interviews data and open-ended questions from surveys. The unit of analysis were the individual postings within forum discussions. The whole message or segments of the postings (or speech in the case of interviews) were coded. The following aspects characterised the coding process: A single unit could be assigned to more than one category; non codable units were units that could not be assigned any significant code related to the subject of the study; not only manifest was analysed but also latent content-silence, sighs, laughter, and posture (Elo & Kyngas, 2008). As a coder my main objective was to uncover recurring patterns and consistencies as well as idiosyncrasies in social interactions (Saldana, 2013).

Analytic categories were directly juxtaposed with each research question. At a primary level of analysis, a number of categories of scaffolds were created based on the current literature on online scaffolding (deductive process). During the coding stage, categories were refined and other codes were integrated (inductive process) in order to better reflect the findings; online discussions were coded twice as a result of such refinement. At a secondary level of analysis, the study's findings from three lecturer interviews, two student surveys and two

online discussions were analysed using the lenses of the theory of transactional distance along with the wider literature in distance education (e.g., student persistence, learner support, community of inquiry).

This coding scheme was developed rooted in the functional categories presented by Hannafin et al. (1999) and further refinements (Cowie & Khoo, 2014; Stavredes & Herder, 2013; Stavredes, 2011). As a result 26 categories representing three tiers (i.e., social, strategic and peer scaffolding) were distinguished as concrete and operating indicators of scaffolding types (Appendix C). In addition, procedural scaffolding was also part of the analysis, which was represented by three categories: Orientation, expectation and resource scaffolds.

3.7.2 Statistical analysis

In quantitative data analysis, numbers constitute the unity of analysis (Menter et al., 2011). As this is a small-scale study, descriptive statistics, more specifically frequencies and percentages, were used to describe survey data (Menter et al., 2011). The surveys consisted of single and multiple-choice questions, using three to five-point likert-scales and open-ended questions. In addition, I have not used any TDT scales to quantify the elements of the TDT in this study, therefore I could not measure the levels (i.e., low, medium, high, etc.) for course structure, dialogue, and learner autonomy. Consequently in my discussion I will not comment on these levels within the course in this study.

3.8 Ethical considerations

Researchers argue that ethical practices should be implemented throughout the research process (Creswell, 2012). From research design to publication of findings, ethical procedures must be taken to ensure respectful interactions with participants and research settings. In this study ethical approval from the Human Ethics Committee of the University of Waikato was sought prior to the start of the project. Subsequently, letters of invitation, information sheets and consent forms were sent to all participants and stakeholders. Ethical procedures were undertaken throughout the entire study and will be described as follows.

3.8.1 Informed consent

Informed consent was obtained from the Associate Dean of the Faculty of Education, the Professional Studies in Education Chairperson, the two lecturers and from the 14 students. Lecturers' consent forms confirmed the lecturers' agreement to allow relevant online discussions to be sampled for analysis, their participation in interviews, and for the students in their class to participate in the research (subject to student consent). The lecturers were asked to provide the researcher with access to their students through the course's Moodle page.

Students were invited to take part in this study. They were informed about the nature of the study and were invited to complete two online surveys as well as to have their online discussions used as data. Students who declined to participate in this study did not have any online postings recorded, analysed, or quoted in this study. Participation in the study was entirely voluntary and participants were informed about the right to withdraw from the study until one week after the end of the semester, when the meta-analysis would begin.

3.8.2 Privacy and anonymity

All data are held securely in the researcher's office of work, on a password protected computer. Data will be securely stored for five years after the end of the project. All lecturer and student data were assigned a reference code or pseudonym to maintain confidentiality of the participants involved. Only aggregated results of the survey data analysis were used in the reporting. Data from online discussions will be reported in aggregated form where possible, otherwise they will be anonymous.

3.8.3 Participants access to this study

Research participants will have access to the information generated by this study. This Master of Education thesis will be available at Research Commons at the University of Waikato website. In addition, lecturers received a bound copy of the thesis with the intent of sharing the research findings with them.

3.9 Issues of trustworthiness

Guba (1981) suggested four criteria that should be addressed in pursuit of trustworthiness: Credibility, transferability, dependability, and confirmability.

Credibility, also known as internal validity, demonstrates that a description of a particular issue or set of data is supported by the data (Cohen et al., 2011). Internal validity is relevant in studies that try to establish a causal relationship and is not deemed relevant in most observational or descriptive studies such as this one.

In order to accurately examine the object of research, this study applied triangulation of methods and participants because the use of different research methods balances out their individual limitations as well as catalyses their respective advantages (Guba, 1981; Shenton, 2004). Similarly, having both lecturers and students as participants provided a variety of perspectives on scaffolding and at the same time minimised researcher bias (Shenton, 2004). Throughout the analysis disconfirming evidence practice was also undertaken after the establishment of preliminary themes and categories. Creswell and Miller (2000) defined disconfirming evidence as the “search through the data for evidence that is consistent with or disconfirms these themes” (p. 127). Moreover, peer debriefing was often undertaken where the researcher shared emergent insights and preliminary findings with the supervisor. Meetings were held once a week in which the supervisor posed a series of questions in order to timely redirect the inquiry (Guba, 1981).

To verify if interviews were accurately transcribed, member checks were undertaken at the end of data collection. In this process the researcher asked lecturers to check the interviews’ transcripts that would be used in analyses and potentially quoted in the thesis. Following Shenton’s (2004) suggestion, the researcher kept a reflexive journal during the research journey, where the researcher’s impressions of each data collection milestone were recorded as well as emergent patterns in the data gathered.

Transferability, or external validity, consists of the degree to which the findings obtained on a small sample can be generalised to the entire population (Cohen et al., 2011). In contrast to statistical generalisation from sample to population, analytic generalisation is used in case studies, in which “the strength

of the case study approach is that the case only represents itself” (Cohen et al., 2011, p. 294), and the focus is directed towards the possibility of the case study to contribute to the expansion of a broader theory (Cohen et al., 2011). Strategies that address the transferability criteria include theoretical or purposive sampling and in-depth description of data. Theoretical or purposive sampling aims to maximise the array of information about what is significant and relevant (Guba, 1981). In-depth description is described by Lincoln and Guba (1985) as a way of achieving a type of external validity. By explaining a phenomenon in sufficient detail one can start to evaluate the extent to which the conclusions drawn are transferable to other times, contexts, situations, and individuals (Lincoln & Guba, 1985). This case study has employed theoretical sampling and in-depth description of participants’ perspectives and actions, educational context and time factors.

For a research to be reliable, it needs to demonstrate that if it is replicated with a similar cohort of participants in a similar setting, then similar findings would be found (Cohen et al., 2011). In order to meet this criterion, this chapter details the research design and its implementation, the procedures and tools of data collection, the research setting, the sample, and a reflective account of the research project.

Confirmability is concerned with the pursuit of objectivity in the inquiry process (Shenton, 2004). It represents a degree of neutrality or the extent to which the results of a research are shaped by the participants and not researcher bias, motivation, or interest (Lincoln & Guba, 1985). Triangulation of a variety of methods and sources may increase confirmability of findings and diminish the effect of researcher bias (Guba, 1981; Shenton, 2004). Other key aspects of confirmability consists of the reflexivity of the researcher, who must provide reasons for decisions made about research approaches and techniques chosen as well as the researcher’s own predispositions (Shenton, 2004). In this study triangulation of methods and sources were applied, a reflexive journal was developed, along with weekly peer debriefing with the supervisor.

3.10 Limitations and delimitations

This research contains specific limiting aspects, some of which are due to drawbacks of qualitative and quantitative research methodology and some of which are inextricable to this study's research design.

Although I had mostly silent engagement in the online course, which lasted approximately four months, it was noticeable that my presence influenced the lecturers' actions from the beginning of the course. For example, some postings from Lecturer 1 were about scaffolding, which is a topic not covered in that educational leadership course. As for the students, it seemed that they felt safe to have their peers investigating their learning process and online engagement. Such understanding was evident in e-mails exchanged between the researcher and students regarding the online surveys and in quotes at forum discussions. Overall, my online presence did not disturb any participants' activities or dynamics in the course under consideration.

Another limitation of the research was that the researcher did not have access to either e-mails or correspondence between lecturers and students in the "Personal reflection space" and "Personal feedback" section. This lack of access to these two spaces represented a deliberate decision made by the lecturers of the course, in order to respect confidentiality and privacy of students' personal matters. In distance education literature, this form of individual communication is considered to be very important as it demonstrates a lecturer's acknowledgment of students as individuals, it minimises feelings of isolation and encourages persistence in the online course (Stavredes, 2011). This factor impacted on my findings, as reported by Lecturer 1, scaffolding strategies were enacted in these spaces, as well as in phone conversations between Lecturer 1 and students. Therefore my findings reflected scaffolding activities being practised only in forum discussions.

Another limitation of this study relates to the free access to the start-of-course online survey on the course Moodle page. It is possible that students and lecturers have been influenced by the understandings about online scaffolding indirectly provided in the online survey. As a consequence students could have started to consciously scaffold peers and be more aware of the way they composed the postings in order to prompt peer scaffolding.

Another constraining factor in this study was the fact that out of 20 students enrolled in the course only 14 completed both online surveys (11 students each survey). Thereby their views expressed in the surveys and their activities in two weeks of discussion forums might not necessarily represent the whole student cohort as well as all teaching practices developed during the course (Menter et al., 2011).

In summary, this chapter offered a thorough description of this research methodology. Case study approach was implemented with the aim to explore how lecturers and students scaffold learning in a fully online educational leadership course. The mixed-method research design was undertaken with the attempt of obtain a deep understanding of the phenomenon under consideration. The theory of transactional distance was chosen as analytical lenses for its focus on teaching and learning needs in distance education. The different research tools used were explained as well as the ethical considerations embedded in their execution.

Chapter 4: Findings

The aim of this case study was to explore lecturers' and graduate students' understanding of scaffolding actions in a fully online educational leadership course. This chapter presents the findings of this study generated through the analysis of two lecturers' interviews, two student surveys, and two online discussion forums. The results were organised according to the following themes: Lecturers' and students' views about online scaffolding in general, procedural scaffolding, social scaffolding, strategic scaffolding, and peer scaffolding. Such layout answer the following research questions:

1. How do lecturers understand online scaffolding?
2. How do students understand online scaffolding?
3. What types of online scaffolding do students in this course expect?
4. What types of online scaffolding are implemented by lecturers and students in this course?

Most representative quotations were used to illustrate the main points. Appendix C provides a detailed explanation of the coding scheme used in the discussion forums analysis.

4.1 Online scaffolding

4.1.1 Lecturers' perspectives on online scaffolding

Several themes were identified in the start-of-semester interviews with lecturers, including, lecturers' ideas about online scaffolding, learner autonomy, scaffolding changes over time, and over-scaffolding.

4.1.1.1 Online scaffolding

Online scaffolding was mentioned 14 times by Lecturer 1 and five times by Lecturer 2 in the start-of-semester interview (for the full list of questions see Appendix A). According to Lecturer 1, scaffolding is fundamental even at the post-graduate level because it offers quality standards of professional practice and

promotes authentic learning situations. Lecturer 1 perceives himself as a facilitator of learning, the one who assists students to become educational leadership practitioners and/or experts.

At a master's level, I think scaffolding is really important because scaffolding in the sense of (...) creating parameters and then secondly creating specific learning opportunities (...) And so, as an online teacher, I see myself as a, maybe a tool to assist learners coming to being, both as learners and as those with expertise in a specific field (...)

(Lecturer 1, start-of-semester interview)

Another important point made by Lecturer 1 is that of a design strategy in which while the students are focused on a specific content section, future sections are blocked in the learning management system (LMS) and are gradually revealed as students progress in their learning. In the dynamic process that characterises an online course where the lecturer creates the 'big picture' of the course, Lecturer 1 intentionally develops these small details that make the elusive course feels real.

When talking about online scaffolding, Lecturer 2 focused on instructional support design and questioning. Resources (e.g., PowerPoint slides and Panopto presentations) as well as asynchronous dialogue spaces (e.g., forum discussions and private shared messaging) were some examples mentioned by Lecturer 2. Course readings were also important for Lecturer 2, especially in terms of inviting students to contribute to the readings list.

Well, I suppose there are four themes I now do which I hope is helpful to the student (...) I am using a PowerPoint to highlight key learning and key theory, and key authors (...) I now do, I didn't use to but now I do a Panoptic presentation of the PowerPoint (...) And so they can look at the PowerPoint and listen to Panoptic presentation and hopefully that helps them to take in a form of complete understanding of it. And then it is discussion group, so there is always a couple of questions, invites feedback each week on (...) some key features of PowerPoint and so couple of questions right to that inviting discussion where they can engage with literature that is suggested for them (...) or they can include literature they found (...) And then of course the other side is, the personalised questions, they

can raise questions within the discussion, genuinely, and other students can answer that or I can if need be. And then there is the private questions as well, if they want to just ask private questions, basically.

(Lecturer 2, start-of-semester interview)

These points resonate with those of Lehman and Conceição (2014) about design elements and instructional support strategies to help students learn. For instance, questioning characterised an important element of online scaffolding for Lecturer 2. Questions introduced by lecturers at the beginning of the forum discussion and queries asked by students publicly or privately illustrated such element. Importantly, responsiveness towards questions asked by students was seen as a responsibility shared between lecturers and students during online discussions.

4.1.1.2 Learner autonomy

In the start-of-semester interview, learner autonomy was mentioned three times by Lecturer 1 and it was not referred to by Lecturer 2. When talking about learner autonomy, Lecturer 1 spoke about providing time and space for students to grasp new concepts and take responsibility for their own learning.

What I mean [by learner autonomy] is students needing to have the time and the space to grapple with new concepts, to struggle with new concepts. First of all, I think is good for them, in the sense of they are responsible for their own learning. Secondly, I think (...) the learning is more likely to be embedded. Thirdly, I think that they are more likely to make connections between different aspects and elements of the paper if they have to think in those ways.

(Lecturer 1, start-of-semester interview)

In this fragment Lecturer 1 indicates that through a student-centred approach, students have a greater chance to effectively and efficiently learn new concepts.

4.1.1.3 Scaffolding changes over time

During the start-of-semester interview, Lecturer 1 commented about changes in scaffolding five times and Lecturer 2 mentioned it twice. Lecturer 1 distinguished two ways in which scaffolding changes occurred in his experience. On the one hand, the lecturer stated that at the end of the course he scaffolds less since students feel more confident to engage with other students, the content, and the environment. On the other hand, Lecturer 1 said that 10 years ago he used to scaffold student learning intensely but now he scaffolds to a lesser extent. According to Lecturer 1, minimal scaffolding fosters critical thinking.

I think there is a change in the nature and the extent of the scaffolding through the course of the paper, yes. By the end of the paper we [are] scaffolding less. Because they [students] feel far more comfortable about participating (...) And, ten years ago I was scaffolding furiously, now I try not to scaffold (...) I try to keep the scaffolding to a minimum in order to support the student and encourage the innovative, creative, generative thinking.

(Lecturer 1, start-of-semester interview)

Lecturer 1 also said that he planned to minimise online scaffolding in this version of the course:

What I am doing this time is (...) to reduce the amount of scaffolding, not increase it.

(Lecturer 1, start-of-semester interview)

When reflecting on changes in scaffolding, Lecturer 2 emphasised the importance of instructional design for online scaffolding.

Any variation would be around assessment time, prior to assessment time there might be some clarification about the assignment question. So I do that in the face-to-face group, so I try to do that online as well, and just to highlight what would be the key criteria, when marking assignments so they are familiar with that. So that happens with each assignment.

(Lecturer 2, start-of-semester interview)

According to the lecturer, there were intermittent peaks of learner support related with clarification of assessment parameters in periods that preceded assignment deadlines.

4.1.1.4 Over-scaffolding

Over-scaffolding was a concern by Lecturer 1 (who mentioned it three times in the start-of-semester interview):

I truly fear that sometimes we scaffold people out of learning (...) And if we scaffold too much it becomes academic training not education.

(Lecturer 1, start-of-semester interview)

Lecturer 1's view about academic training versus education resonates with that of Moore and Kearsley (2012), who also differentiated education from training. For these authors education is related to teaching and learning, a relationship that has two sides (i.e., the student, who deliberately chooses to learn and is helped by another; the teacher, who designs types of support for that individual to learn), while training is usually focused on the learning of practical skills. Perhaps Lecturer 1 is drawing an association with a teacher-centred approach, where the teacher dominates the teacher-learner relationship, over-scaffolding students' learning.

4.1.2 Students' perspectives on online scaffolding

Both start-of-course and end-of-course surveys contained questions asking students to describe online scaffolding. At the start of the semester, only four out of 11 students had prior experience with online courses. Thus emphasis is given to results from the end-of-course survey due to the fact that by the end of the semester students (including the seven novice students without previous experience with online courses) were supposed to have good understanding of online scaffolding. In the end-of-course survey, when asked "how would you define online scaffolding-support?" students pointed to several themes, including definition of online scaffolding, guidance, support towards assessment

development, providing formative and timely feedback, and peer support. Each theme will be described through students' quotes and a brief discussion.

4.1.2.1 Online scaffolding

Definitions of online scaffolding were provided by two students in the end-of-course survey. One of these definitions of online scaffolding resembles views that stem from social constructivism theories of scaffolding and zone of proximal development:

I would define online scaffolding as the provision of (or allowing for) techniques to support learning which are only provided when necessary and removed strategically to encourage independence.

(Student 5, end-of-course survey)

Two students, one in the start-of-course survey and another in the end-of-course survey, cited the instructional design strategy of progressively unveiling content throughout the duration of the course as an example of scaffolding:

Opens up resources at certain time frames.

(Student 1, end-of-course survey)

Thus online scaffolding is perceived by students as strategies enacted by lecturers in order to support learning. According to students' understanding, such educational interventions (e.g., uncovering of content at specific times) are only provided when there is a need and are purposefully withdrawn for fostering learner autonomy.

4.1.2.2 Guidance

Guidance was mentioned by three students as a crucial aspect of online scaffolding. For example, prompting deeper thinking and suggesting further direction in online discussions characterised guidance for Student 7:

Suggesting further thought and direction based on interactions made online

(Student 7, end-of-course survey)

Resources and questioning presented before the commencement of online discussions also was considered a form of guidance by Student 6:

After completing the readings and reflecting on the questions posted by the lecturers really helped my learning and was well done. Was much more effective, than just myself doing the readings and reflecting.

(Student 6, end-of-course survey)

Thus students indicated that procedural scaffolding via resources and questioning presented before online discussions and strategic scaffolding through stimulating critical thinking and giving further directions in online discussions characterised guidance for students.

4.1.2.3 Support towards assessment development

Support towards assessment development was a form of online scaffolding mentioned by three students in the end-of-course survey. Clarification of criteria for assignments took place in several different spaces: Private shared messaging space, Q&A section, and by phone. Another essential point indicated by students was the fact that lecturers provided feedback on students' contributions, such as essays plans, posts, and assignments. For instance:

Questions messaged to Lecturer 1 and he replied and then we talked on the phone which made my understanding of the paper/assignments/expectations clearer.

(Student 12, end-of-course survey)

Feedback was provided on my essay plans.

(Student 2, end-of-course survey)

Feedback about how I went with my 2nd assignment and what I can do to improve my mark.

(Student 4, end-of-course survey)

Feedback on assignments was also indicated as crucial for fostering progress in their learning processes. Therefore responsiveness of lecturers before and after assignments represented a form of online scaffolding for students.

4.1.2.4 Providing formative and timely feedback

Providing formative and timely feedback was the instructional support strategy most frequently cited by students. Formative and timely feedback was pointed out by eight students as an example of online scaffolding in the end-of-course survey. Formative feedback on the quality and quantity of postings and timely feedback in online learning spaces characterised students' responses. For instance:

Feedback within a day has been most helpful. Either from fellow students or the lecturers.

(Student 3, end-of-course survey)

Feedback was also provided on my posts.

(Student 2, end-of-course survey)

Students considered feedback to be prompt if it was received within 24 hours from the submission of students' postings.

4.1.2.5 Peer support

Peer support was cited by two students (Students 3, 12) in the end-of-course survey as a very important source of online scaffolding. Importantly, students perceived their peers to be able to teach them.

Support from colleagues (Student 12, end-of-course survey)

In this sense, peer feedback was acknowledged as an example of online scaffolding for students.

In summary, both lecturers and students defined online scaffolding and indicated common important aspects, such as the fact that scaffolding is only offered when needed and is withdrawn strategically to foster learner autonomy. In addition, both groups mentioned that examples of scaffolds include gradual release of content, resources, and questioning. The following sections will describe the different types of scaffolding that were identified in this study.

4.2 Procedural Scaffolding

Procedural scaffolding assists students in learning how to navigate the course environment and engage in learning tasks (Stavredes, 2011). The main objective of this type of scaffolding is to describe resources (e.g., a document) and where they can be found. Within the general category of procedural scaffolding, several sub-categories were identified as part of the educational leadership online course, such as orientation scaffolds, expectation scaffolds, and resource scaffolds.

4.2.1 Orientation scaffolds

The key principle of orientation scaffolds is to help students understand how to access the distinct features of the course so that they can successfully complete tasks and engage in interactions (Stavredes, 2011). Before the commencement of the course, lecturers sent a welcome letter to students introducing the course and explaining procedures needed to get access to the course webpage. Moreover, novice online students were encouraged to self-enrol in the “Moodle Support Information” course to become familiar with the learning management system (LMS) used in the course. This study preparation course was designed to help students to find tools and resources on Moodle and to provide a platform for students to practise using this LMS.

4.2.2 Expectation scaffolds

Expectation scaffolds help learners to understand what is expected from them when engaging with other students, the content, and learning environment (Stavredes, 2011). The Faculty of Education provides a document entitled “General requirements and regulations for masters’ programmes”. This document briefly describes participation requirements, general information of library

resources, assessment specifications, information about referencing and plagiarism, and issues regarding student wellbeing². This faculty expectation statement was present on the course's webpage.

4.2.2.1 Lecturers' expectations

Students need clear guidelines and explicit expectations when participating in an online course (Dennen, 2013). A message named "Support and expectations" was posted in the news forum in the second week of the course. In this posting Lecturer 1 expressed the following expectations of the course and students:

So what do I expect? Obviously, assessment activities are clearly spelt out in the paper outline and I have an expectation that you would read these carefully, understand them and contact Lecturer 2 or me should you have any difficulty in understanding the various tasks. In this vein, we expect you to be online three times a week, to read widely - beyond the texts that we supply online - and to share your reading and thinking online via your normal conversation postings and the student resourced readings.

(News Forum, 21st July 2014)

In this posting Lecturer 1 revealed an informal road map of the course and explained the purpose of each online space in the Moodle course page. He informed students that they should begin the course by reading the course outline and made it clear that lecturers would be available through different spaces when students needed help. Subsequently, the lecturer briefly explained the first assignment of the course: "Contribution to class or online discussions" (University of Waikato, course outline, 2014)³. In this assessment students were required to contribute to online discussion forums at least three times a week, with

² The document "General requirements and regulations for masters' programmes" is not obtainable as it is a document that is only available to participants of the Faculty of Education's courses. However, it constitutes a reliable source which gives evidence to describe the course under study.

³ The course outline was also in the course's webpage and is a document only available for students enrolled in the educational leadership course. Although the course's outline is not a publicly accessible document, it consists of legitimate data as the course's lecturers developed it and it describes several aspects of the course (e.g., course's structure, learning goals, workload, required readings).

novel ideas, reflections, readings or comments on readings, or discussions, and commentaries about other students' postings (University of Waikato, course outline, 2014). The quality of the contributions was the major requirement in this assessment, and it was expected that it would not only reflect students' understanding of the content, but also add to the development of discussion threads (University of Waikato, course outline, 2014). Furthermore, students were required to post at least one annotated bibliography of one reading per fortnight in the 'Student Sourced Readings' space. This assignment was worth 15 % of the final mark in the course (University of Waikato, course outline, 2014).

Lecturers also explained what students can expect from them and the course. Responsiveness and scaffolding as well as a learning environment with an informal tone of communication in which lecturers encourage peer feedback were the main points raised by the lecturers:

So what then can you expect from us? In the first instance you can expect us to respond to your work in a timely and appropriate manner, scaffolding and supporting your learning as the semester progresses. Lecturer 2 and I (...) like the environment to be supportive, learningful, chatty and where possible, less formal (...) we rely on you to respond to one another's postings in an analytical, scholarly and supportive manner. You will note that there are periods during which Lecturer 2 and I do not post any comment (...) We are not absent, we are lurking! For us, this means that we are reading intently and suppressing the urge to respond immediately, thus encouraging the primacy of your responses.

(News Forum, 21st July 2014)

Thus lecturers expect students to take responsibility for their own learning. In addition, student learning is facilitated through a blend of directive and non-directive teaching strategies. Such combination of strategies addresses learners' needs and supports students to successfully complete their academic activities.

4.2.2.2 Students' expectations

By taking into account students' expectations, lecturers involve learners in the course design process which helps lecturers to shape the online environment according to specific learners' needs (Lehman & Conceição, 2010). In the start-of-

course survey, all 11 students indicated their expectations in regard to teaching and learning in this online course. In particular, students were asked about the extent to which they expected their lecturers to be a guide, sum up content, share personal perspectives, give feedback, acknowledge their ideas, challenge their ideas, use questioning to keep momentum in online discussions, and be present (summary of students' responses is illustrated in Figure 1). This set of expectations aims to test the students' expectations from their lecturers as found by Forbes (2012). In addition, students also responded to two open-questions. One question asked about the types of support that should be provided by lecturers in this online course (start-of-course survey). In the other students were asked for suggestions for improving teaching and learning in the course (end-of-course survey).

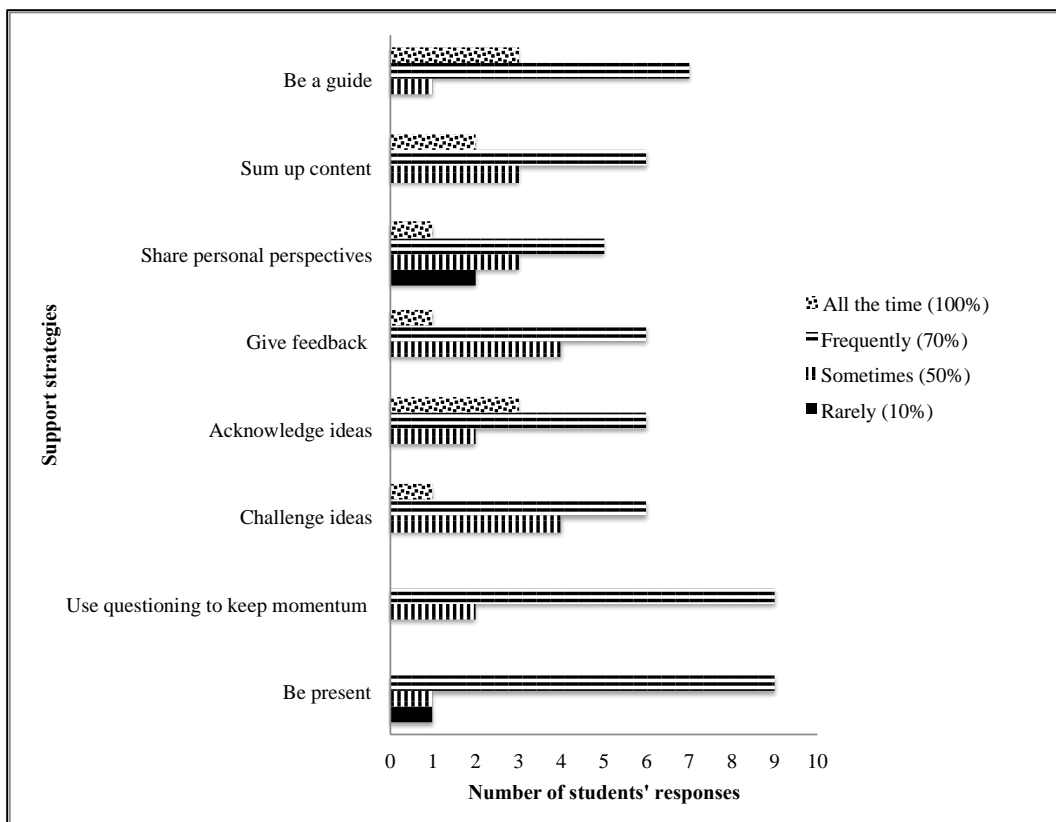


Figure 1. Students' expectations in regard to lecturers' teaching practices at the start of the course (the start-of-course survey).

As can be seen in Figure 1, the majority of students (nine out of 11 or 81.8%) frequently expected lecturers to “be present” and use questioning to keep momentum in online discussions. Lehman and Conceição (2010) explain sense of presence based on Biocca, Burgoon, Harms, and Stoner (2001, May) study, which

sees the concept of presence as two interconnected phenomena: Telepresence (the sense of “being there”) and social presence (the sense of “being together with others”). Telepresence in the virtual classroom occurs when students have the impression or feeling that they are present at a space remote from their own actual place, while social presence consists of interactions with individuals in the online environment (Lehman & Conceição, 2010).

Sense of presence was a theme raised by three students (Students 3, 5, 11) when asked about what types of support that should be provided by lecturers. The next three quotations show the nature of the sense of presence expected by them:

A sense of their [lecturers'] presence is needed but without the need to be rescued all the time. This allows for individuals to problem solve on their own or with support when required.

(Student 3, start-of-course survey)

Other than what is already in place (including regular online presence of lecturers with insightful prompting and reassurance), the capacity and initiative to break our larger number into smaller groups so that the conversation is more manageable would be helpful.

(Student 5, start-of-course survey)

I think that so long as the course teacher/s are available to answer questions when required then that is sufficient. I understand that instantaneous replies are not always possible (...)

(Student 11, start-of-course survey)

Although students want lecturers to be regularly present in the online course, they do not expect them to respond immediately but efficiently when need be. *Insightful prompting and reassurance* also characterises sense of presence for Student 5, who reported that such teaching actions were already in place in the period before the third week of the course.

Use of questioning to keep momentum in online discussions was also a support strategy pointed out by nine students. The types of questions one asks at the start of a discussion set an important conversation tone. The same is true for

subsequent questions, asked by lecturers and students, which help sustain the dialogue (Brookfield & Preskill, 2005). Brookfield and Preskill (2005) describe a variety of types of questions, including questions that ask for more evidence, questions that ask for clarification, open questions, linking questions, hypothetical questions, cause-and-effect questions, and summary and synthesis questions. Examples of questioning were found in online discussions and will be discussed subsequently in the strategic scaffolding section.

Results in Figure 1 show that seven students out of 11 (63.6%) often expect lecturers to be a guide. When asked about the kinds of online support that should be provided by lecturers in this course, two students answered as follows:

As much information as possible. I guess pre-empt the questions that may seem obvious. (Student 4, start-of-course survey)

Good organisation and clear structure of the material placed in Moodle so we understand the links to the assignments. (Student 9, start-of-course survey)

On the one hand, Student 4 made a commentary about a key aspect in online teaching and learning: Provide students with thorough and complete information about the course's procedures and tasks in order to avoid misunderstandings and learner frustration. On the other hand, the last quote indicates another learner need: Clear and concise course structure. Such statement aligns with a suggestion made by Student 7 in the start-of-course survey when asked about their expectations regarding lecturers' teaching practices: *Make connections to paper directions.*

Sum up content (Students 1, 2, 3, 8, 9, 10), give feedback (Students 1, 4, 6, 7, 8, 9), acknowledge (Students 1, 5, 6, 7, 8, 9) and challenge ideas (Students 2, 4, 5, 6, 7, 8) are instructional support strategies frequently expected by six students (54.5%). Four students (Students 1, 2 and 11 in the start-of-course survey and Student 4 in the end-of-course survey) commented on their expectation of lecturers giving timely and formative feedback:

Questions should be answered asap and it is helpful if they give feedback on your postings and discussions. This enables you to get a better understanding of whether you are on track or not. (Student 1, start-of-course survey)

Provide feedback on the comments in the discussions privately as regards to how students were going with amount of postings and quality of those postings. So we know what to do to gain a better mark in this assessment type. (Student 4, end-of-the course survey)

Beyond private feedback on postings, checking assessment drafts before final submission was also mentioned by Student 2 in the start-of-course survey: *Being able to check planning or drafts of essays.*

Interestingly, some students suggested other types of support, including face-to-face opportunities (Student 7, start-of-course survey), replying to e-mails (Student 10, start-of-course survey), fostering a sense of community (commented twice by Student 4 in the end-of-course survey), *foreshadow coming content* (Student 7, start-of-course survey), and setting up *an informal space eg. Facebook page would have been a safe place to discuss some topics* (Student 3, end-of-course survey).

Another insightful suggestion consisted of providing a flexible approach towards assessments, as suggested by Student 5 in the end-of-course survey:

Greater weighting of marks for online discussions, as this was where the majority of the learning occurred for me - but I have limited time, so I had to disengage in order to ensure I devoted adequate time to the essay-style assignments that dominated the assessment landscape (...) I wonder whether it's possible to provide a flexible approach to assessment options so that people could decide where to put their energies and gain marks?

(Student 5, end-of-course survey)

Beyond individual experiences students may be creatively gathered in large or small groups, introducing variety in an online course (Boettcher & Conrad, 2010; Brookfield & Preskill, 2005). Creative grouping can not only surpass the effect of inhibiting the participation of some individuals in whole-

group discussions (Brookfield & Preskill, 2005), but also prepare online learners for current work world (Palloff & Pratt, 2005). Three students (Student 5 in the start-of-course survey; Student 7 in the end-of-course survey and Student 9, reference 30, Q&A Section) commented on grouping students, as one of them succinctly put it:

The capacity and initiative to break our larger number into smaller groups so that the conversation is more manageable would be helpful. (Student 5, start-of-course survey)

Grouping students is an important strategy to increase the time and space available for each student to share his or her thinking with lecturers and fellow students (Boettcher & Conrad, 2010). Grouping students was mentioned four times by Lecturer 1 in the end-of-semester interview. During the course lecturers divided students into groups of discussion. Such an arrangement lasted for 10 days and the groups were deactivated due to the impossibility of solving a technical glitch that was unknowingly made, which shut some people out of the course. Lecturer 1 reported that the support received from the Information and Technology Services was insufficient to solve this issue. Four students (Students 3, 4, 5, 7) reported frustration in relation to being excluded in the end-of-course survey. Student 3 synthesised this feeling of frustration as the following:

I enjoyed having the class split into three groups. This made it more manageable. Unfortunately this only lasted a few days. I lost my momentum after that. (Student 3, end-of-course survey)

In addition, Student 9 (Reference 30, Q&A Section) suggested a systematic organisation of the readings provided by lecturers and those sourced by students. Considering the amount of readings encountered in these two spaces, three students (Students 5, 6, 12) in the end-of-course survey commented that they have felt overwhelmed due to the information overload:

Initially I felt overloaded with readings - lecturers said read this, others were reading more than specified from the student readings and adding these to

comment so then I felt I had to read these. Then there were all the student sourced readings that kept being posted. Plus the discussion topics - for a newbie to online learning at this level it was quite overwhelming.

(Student 12, end-of-course survey)

This section has presented the expectation scaffolds from lecturers' and students' perspectives. Lecturers' expectations for students encompassed a variety of aspects, such as reading the course outline, online presence and quality postings. On the other hand, key students' expectations for lecturers were the use of questioning to keep momentum in online discussions and being present. Resource scaffolds are an essential subtype of online scaffolding which will be discussed in the next section.

4.2.3 Resource scaffolds

Resource scaffolds help students as they participate in the course activities (Stavredes, 2011). Taking into consideration students' perspectives in helping to shape and enhance the online environment, students were asked about the types of support that should be provided by lecturers in the course in the start-of-course survey. In addition, students were asked for suggestions for enhancing teaching and learning in the course in the end-of-course survey. The responses were categorised into five suggestions: Timely and thorough explanation of assessments was suggested by five students (Students 4 and 9 in the start-of-course survey and Students 4, 12, 13 in the end-of-course survey), as seen in the comment made by Student 13:

Needing a clearer outline of the assignment format would have been really useful at the start of the paper rather than when students ask in Q & A, particularly for those who haven't done study for quite some time. (Student 13, end-of-course survey)

Three students (Students 2, 6, 9) in the end-of-course survey suggested the implementation of a clear timeline for each section of the course, as shown in the following quote:

I feel some topics continue too long and the discussions and reflections become stale. A timeline of how long we will stay in each topic would be excellent. (Student 6, end-of-course survey)

Perhaps Student 6 is suggesting the provision of a timeline with readings, questions and tasks week-by-week related to the learning outcomes of the course.

Offering weekly starters (or introductions) with discussion questions and suggested readings was suggested by two students (Students 2 and 12), as seen in Student 12's response:

I liked the weeks when readings for us to read from student readings were made clear - the first week it was unclear to me what I needed to read. (Student 12, end-of-course survey)

Equally important, one student (Student 5) suggested the shortening of discussion starters:

I also felt that the discussion starters were unnecessarily long (often ranging across several readings, and asking multiple questions). Narrowing the discussion starters (and providing a ranges of 'ways in') would mean people could self-select groups and have more focused discussions. (Student 5, end-of-course survey)

In particular, giving a specific focus to start the discussion and fostering the growth of students' dialogue over time was also suggested by Student 5. Likewise, the use of vignettes in specific times may trigger students' curiosity and enthusiasm to keep contributing in forum discussions.

Providing a list of references for all readings was a need mentioned once (Student 4) in the suggestions for enhancing teaching and learning, and twice (Students 4 and 9) when asked about frustrations experienced during the course in the end-of-course survey:

Provide APA references for all readings they provide before being asked. (Often these things where what a lot of people were asking for in the Q and A page.) (Student 4, end-of-course survey)

This point was further illustrated in nine postings that asked for references for required readings in the Q&A section (References 35, 36, 43, 58, 68, 74, 76, 77, 79).

In addition to these two open-ended questions, students were asked about how important it was that lecturers implemented certain instructional support strategies in the end-of-course survey (See Figure 2).

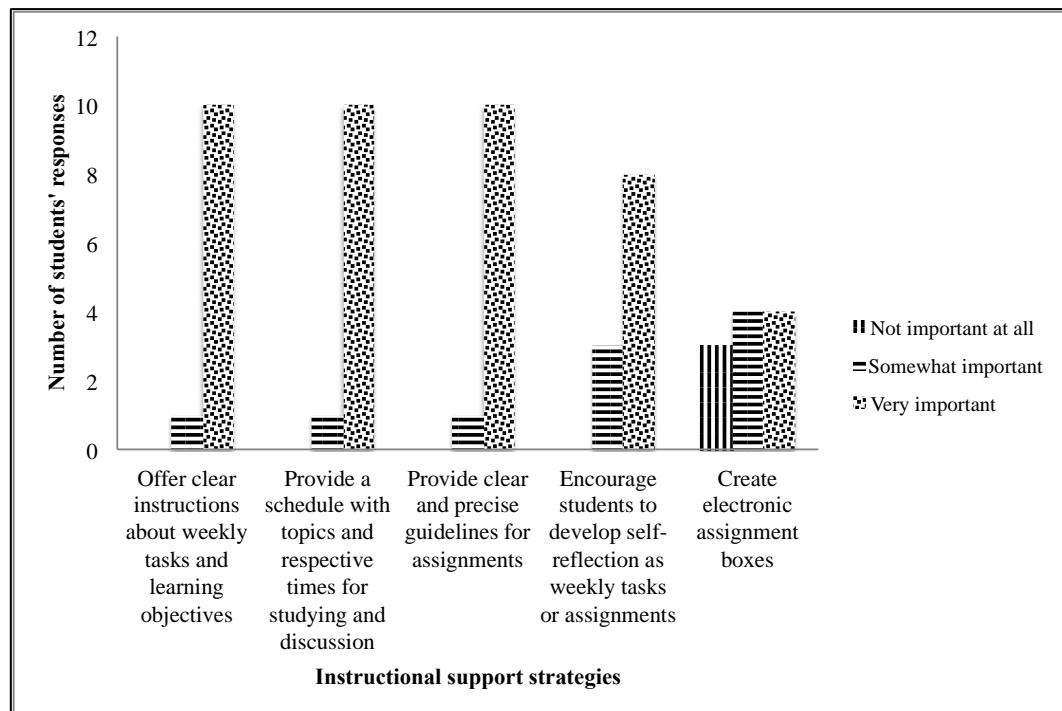


Figure 2. Students' perspectives on the importance of lecturers undertaking specific instructional strategies (the end-of-course survey).

Almost all students (10) indicated that offering clear instructions about weekly tasks and learning objectives; providing a schedule with topics and respective times for studying and discussion; and clear and precise guidelines for assignments were very important scaffolds to help students succeed in an online course. Similarly, eight out of 11 students considered that encouraging learners to develop self-reflection as weekly tasks or assignments was a very important instructional support strategy. However, students expressed mixed opinions about the importance of lecturers creating electronic assignment boxes. Three students considered such strategy to be not important at all, four students perceived it to be somewhat important and four students perceived this resource to be very important.

In the end-of-course survey, students were asked what kinds of support they had experienced in this online course. As shown in Figure 3, eight students out of 11 (72.7%) indicated that tasks were fully and clearly explained before the start of the semester. Nine students (81.8%) reported that lecturers had provided a complete and clear structure of resources before the commencement of the course. Two students (18.2%) pointed out that during the semester, students were divided into groups to help them deepen discussions. Regarding feedback, the majority of the students (81.8%) reported that lecturers provided timely feedback and 90.9% said that lecturers offered formative feedback on students' postings. Only one student (9.1%) remarked that lecturers arranged face-to-face opportunities with student(s) for discussing specific content.

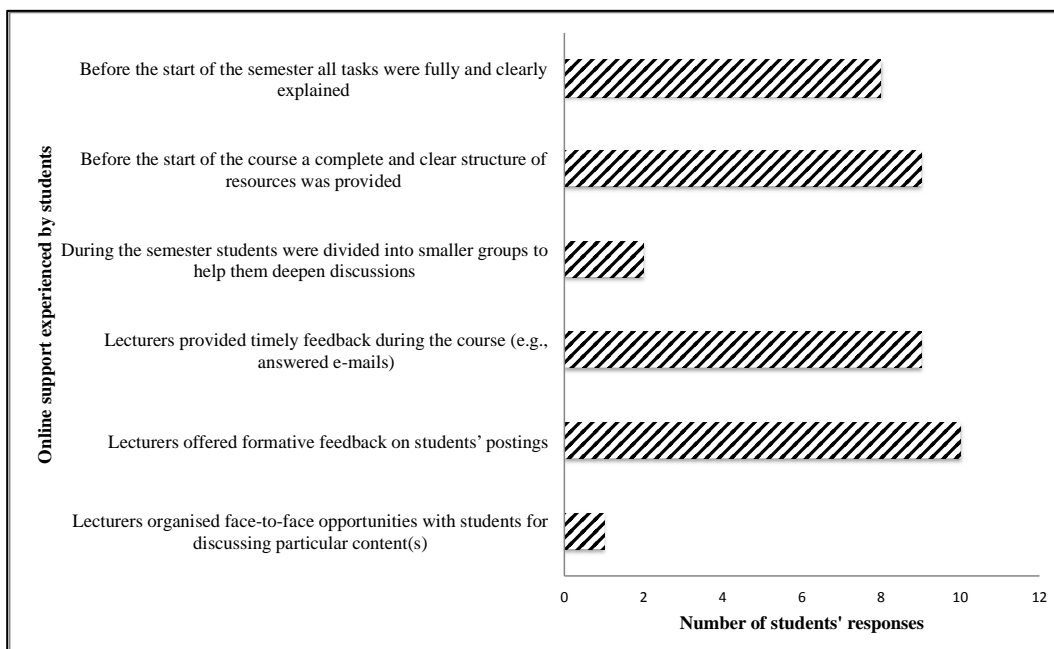


Figure 3. Students' perspectives on the online support actions experienced during the course (the end-of-course survey).

Resource scaffolds are crucial in online scaffolding as its absence may cause uncertainty on what direction to take within an online course. Students reported several types of scaffolds that were implemented during the course and suggested others that may enhance online pedagogy in this course.

To conclude, procedural scaffolding was used during the course in a variety of ways. Examples of orientation scaffolds observed during the course were the welcome letter sent to students and the 'Moodle Support Information' course offered by the university. Expectation scaffolds, which were represented

by lecturers' and students' expectations for the educational leadership course, were communicated by lecturers in the start of the course and were asked of students within this study's surveys. Finally, resource scaffolds gathered information that may potentially help lecturers to shape and enhance the online learning environment. The next section will delve into social scaffolding.

4.3 Social scaffolding

Social scaffolding is crucial for healthy and safe learning environments. Social presence, sense of community and identity, embodiment, collaboration, and collective intelligence are aspects that characterise social scaffolding (P O'hare, 2002). In addition, social interaction, informal discussions and interactive technologies illustrate some spaces used for humanising online teaching.

In this section results are divided into two parts: The lecturer's perspectives on social scaffolding and students' perspectives on social scaffolding. Such frame aims to leave space for the research participants' voices to speak their points-of-view, preferences, dislikes and suggestions for enhancing online pedagogy.

4.3.1 Lecturer's perspectives on social scaffolding

In this part five social scaffolding actions will be discussed using the evidence from the interviews with Lecturer 1 and from samples of online discussion forums. The decision to focus on data from Lecturer 1 stems from a number of reasons. Firstly, the periods of online discussions selected for analyses were selected such that the first segment was towards the beginning of the course (to capture lecturers' and students' expectations in the outset of the course). The second segment was selected at the end of the course in order to have a better understanding of what was experienced by participants during the course. Secondly, as Lecturer 1 taught approximately three quarters of the course, such analysis may offer a more deep understanding of scaffolding actions that are enacted in the majority of the course time frame. Thirdly, this decision was also made due to the need to triangulate data from different methods (in this case, interviews and online discussions). Lastly, by the end of data collection only data for Lecturer 1 from both sources were available.

4.3.1.1 Modelling effective online communication strategies

Modelling effective online communication strategies was cited by Lecturer 1 three times in the start-of-semester interview and twice in the end-of-semester interview. Modelling effective online communication strategies is a social scaffold that transects the majority of types and subtypes of online scaffolding (excluding the setting up of specific spaces in the course design, which are the lecturers' tasks).

In the next quotation, Lecturer 1 expresses modelling as the major strategy that he applies to support learner readiness to effectively communicate with the online community through relevant postings. In the extract Lecturer 1 talks about changes to online postings over time: Long postings with superficial understanding of the content in the commencement of the course gradually become clear records of critical thinking. According to Lecturer 1, modelling effective online communication and fostering students' interaction with the content lead to an increase in learner confidence and competence towards disciplinary knowledge.

Earlier on in the paper, you get some long postings that actually don't say anything. And those postings become more and more concise and precise. And as you move towards the end of the paper, so the postings start to get longer postings again, but those longer postings are really well written. (...) and they are really filled with ideas and thinking. What do I do (...) very little, except that modelling. (Lecturer 1, end-of-semester interview)

4.3.1.2 Setting up private areas for student-lecturer interaction

Private areas for student-lecturer interaction were mentioned three times by Lecturer 1 in the start-of-semester interview and seven times in the end-of-semester interview. Since this subtype of social scaffolding refers to an action by lecturers before the commencement of the course, there are no references to online postings about it.

The personal reflection space provides an asynchronous shared messaging channel between lecturers and students where students can share personal matters or challenges that may be hampering their learning process. In the interview

Lecturer 1 perceives that he enacts a high level of teaching presence and responsiveness to students' concerns in that private area and also mentions that, at times, students sound off frustrations in that space.

(...) that personal reflection space (...) it is confidential. So, they can say whatever they want to say there (...) I go online six times a week (...) And sometimes they will just express frustration. (Lecturer 1, end-of-semester interview)

In the end-of-course survey, two students (Students 4 and 5) mentioned this private space as a really helpful site of dialogue with the lecturer:

One example of scaffolding that I really valued was the ability to clarify requirements for assessments via shared messaging. The discussion (...) helped to deepen my understanding of the topic. (Student 5, end-of-course survey)

4.3.1.3 Sharing insights and personal or professional experiences about the topic under consideration

Sharing insights and personal or professional experiences about the topic under consideration was mentioned three times by Lecturer 1 during the start-of-semester interview and four times during the end-of-semester interview. Personal or professional experiences are personalised and customised knowledge, skills, and practices brought by learners to the educational experience (Boettcher & Conrad, 2010). This social scaffold was observed in only one posting in the second online discussion (Thread Example of change, reference 17, Lecturer 1):

Some really good questions Student 14 and Student 7! Student 7, I can't help but wonder if this section might be very interesting and useful to you in the near future!

Sharing personal and professional narratives related to educational leadership is mentioned in the philosophy of the programme (University of Waikato, course philosophy, 2012): "We value the creation of new understandings and ways-of-being that critically explore the experiential and contextual nature of

educational leadership, in Aotearoa New Zealand and internationally” (p. 1). Learning as a process of coming into being was also cited by Lecturer 1, for whom relevance represents an essential motivator.

Many of them [students] have had leadership experiences. And so to create relevance we are able to draw on the leadership experiences (...) help them to make links between their experiences, their practice and the theory that they encounter. (Lecturer 1, start-of-semester interview)

Social scaffolding supports students to comprehend the theory through reflecting on their personal or professional experiences, adding relevance to the learning process while boosting student persistence.

4.3.1.4 Using interactive technologies for teaching

Using interactive technologies for teaching was cited twice by Lecturer 1 in the start-of-semester interview and in the end-of semester interview, respectively. The lack of physical cues in online courses can be overcome with the use of interactive technologies which may help lecturers to humanise online learning (Pacansky-Brock & Ko, 2013). In the next account, Lecturer 1 comments on the use of interactive technologies, in particular phone and Skype.

I phone students quite often, in this semester I would have phoned students twenty or thirty times I suppose, not each person but in that group (...) “You posted this online, what do you actually mean?” (...) I think that personal contact helps (...) two instances I used Skype because we’ve got those international students. (Lecturer 1, end-of-semester interview)

Through the use of interactive technologies, Lecturer 1 goes beyond the affordances of the LMS used in the course, thus opening up synchronous opportunities of dialogue with students. Interestingly, Lecturer 1 gives feedback on postings to students via synchronous communication tools in order to help them reach and communicate at a deeper level of thinking. Furthermore, he highlights the importance of personal contact with students via real-time voice in the case of the phone, or through voice and image on Skype.

4.3.1.5 Using students' names and/or a more informal tone of communication

Using personal names and a more informal tone of communication was mentioned twice during the start-of-semester interview and three times during the end-of-semester interview. Sharing anecdotes, humour, or simple musings can build empathy on students to share things with the lecturer and their peers (Collison et al., 2000). Moreover, friendly, open, and inviting communication may foster a safe place for learning. This subtype of social scaffolding was also observed in two postings in the first online discussion and in five postings in the second online discussion.

An interesting approach Student 7. Thanks. I wonder if another might be to look at basics, as you suggest (...) (Thread Change agent thinking, reference 1, Lecturer 1)

This lecturer's posting from the second online discussion demonstrates the use of personal names and a more informal tone of communication. The name of "Student 7" and the conversational style in this posting reflect this subtype of social scaffolding.

To sum up, the evidence suggests that in this online course, Lecturer 1 enacted the following subtypes of social scaffolding: Modelling effective online communication strategies, setting up private areas for student-lecturer interaction, sharing insights and personal or professional experiences about the topic under consideration, use of interactive technologies for teaching, and use of students' names and/or a more informal tone of communication. The next section will address students' perspectives on social scaffolding and its enactment by the lecturer and fellow students.

4.3.2 Students' perspectives on social scaffolding

This section presents students' perspectives on social scaffolding as well as samples of online postings showing students practising social scaffolding amongst members of the online community. Such empirical evidence was found in the first and second online discussions, and in the end-of-course survey.

In the end-of-course survey, seven (63.6%) students indicated that lecturers frequently exhibited think-aloud modelling, while two students (18.2%) reported that lecturers did modelling all the time (see Figure 4). Approximately half of students (six) reported that lecturers sometimes shared personal stories and opinions in the virtual environment. Almost three-quarters (eight) of students reported that lecturers sometimes used interactive technologies, whereas two (18.2%) students noticed such practice all the time. Regarding display of personality through tone, graphics and humour, six (54.5%) students mentioned that lecturers sometimes revealed their personalities, although three (27.3%) students indicated that it happened all the time.

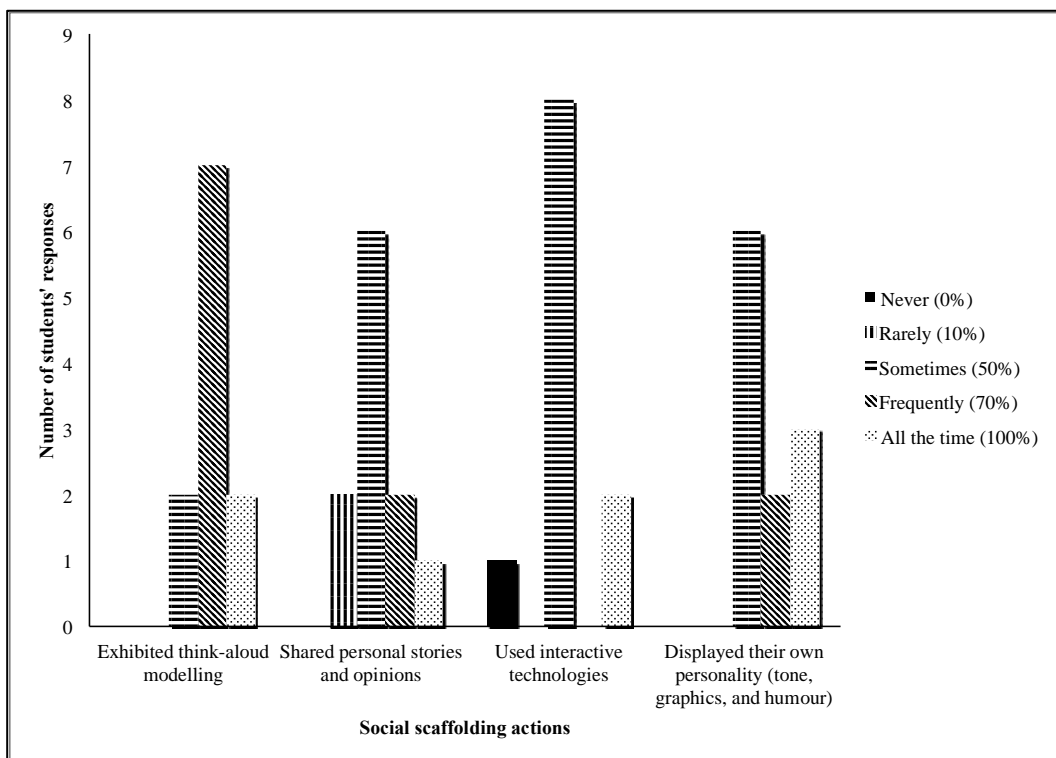


Figure 4. Student's perspectives in relation to social scaffolding actions undertaken by lecturers during the course (the end-of-course survey).

Students also enacted social scaffolding in their interactions with participants in online discussions. Figure 5 shows the frequency of students' postings that displayed three subtypes of social scaffolding: Using participants' names and/or a more informal tone of communication, sharing insights and personal or professional experiences about the topic under consideration, and offering multimodal materials from diverse sources.

The use of personal names and/or an informal tone of communication were observed in 26 postings in the first online discussion (FOD). Such frequency

increased moderately to 33 postings in the second online discussion (SOD). Likewise, there were 30 postings sharing insights and personal or professional perspectives in the FOD, and 33 in the SOD. Surprisingly, nine students' postings demonstrated sharing of resources from diverse sources in the FOD and only two students' postings in the SOD.

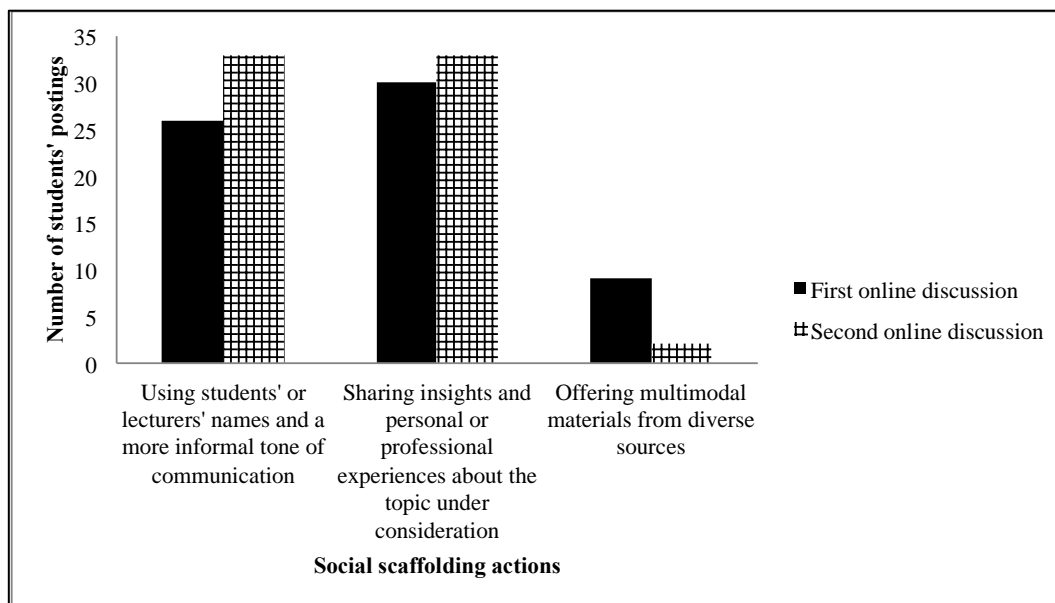


Figure 5. Social scaffolding in students' postings from first and second online discussions.

Examples of each subtype of social scaffolding used by students are presented as follows:

4.3.2.1 Using students' or lecturers' names and a more informal tone of communication

The following quotes consist of one sequence from the first online discussion in which students address each other using their personal names.

Good point Student 4 [student personal name] and nice that you acknowledge the hard work of others. I have a friend who is a Principal of a decile 1 school (...) Her school has made great progress yet the majority of her students are not at the national standard, she states that if that's all she measured her students on it would be depressing (...) It would appear that aspects of the

scientific theory are creeping into our school as the Principal is prescribing lesson plans (...)

(Thread Classical management theory, reference 46, Student 9)

Hiya Student 9 [student personal name],

Good on your friend! Now that is a real Principal to me! you are correct about the 'Standards' too. The variations are crazy and not backed up by appropriate "Theory" lol.

Student 4 [student personal name]

(Thread Classical management theory, reference 51, Student 4)

The informal tone of communication as can be seen in these postings exemplifies a dialogue that has both a conversational (*Good on your friend!*) and an inquiry (*It would appear that...*) nature. The use of the words “hiya” and the acronym “lol”, or laugh out loud, demonstrates informal communication.

4.3.2.2 Sharing insights and personal or professional experiences about the topic under consideration

The subsequent quote illustrates the exchange of personal insights and professional experiences about the topic in the second online discussion:

At the moment we are focusing on writing throughout the school. Our Asttle and NCEA results have shown that writing is an area of concern. Organisation and structure of the writing are particular areas our students struggle with. This year, the literacy head at our school has worked to dispel the belief that literacy should only be taught in English. Literacy should be taught throughout the school (...) It is an example of transitional change, where all staff have now taken a shared responsibility of the students' writing.

(Thread Example of change, reference 19, Student 2)

In this quote Student 2 shares a professional experience that describes one type of change as well as organisational culture predominant in his school. This

student's contribution offers a unique insight of how to tackle an issue at a school: Students' difficulties with writing. His account reveals the adoption of a whole-school approach that acknowledges literacy as a dimension that transects all areas of the curriculum and thus should be a responsibility shared by all sectors of the school.

4.3.2.3 Offering visual materials from diverse sources

Sharing information with peers using visual materials from diverse sources demonstrates willingness to collaborate in the dialogue towards inquiry. Visual resources support a range of learning styles as well as enrich and ground the content in focus. The emphasis here is that the resource is from an external source rather than the students' or lecturers' own intellectual property. The following extract from the first online discussion shows a student acknowledging another for having shared a resource.

Thanks for introducing me to Tū Rangatira. Excellent prompt, which (like Student 4) I'm planning on using to generate reflection and discussion with staff at my school.

(Thread The who of how and why organisations work the way they do, reference 4, Student 5)

Student 5 ends up her contribution posting a visual diagram that summarises seven key roles of leadership and seven key areas of focus extracted from the document in focus. This posting illustrates a situation in which the resource shared by one student was adopted by others who have shared and discussed it with staff in their schools. In this way one can see the emergence of a social network of practitioners that has an effect on the wider community.

Other data regarding sharing resources were reported by students in the end-of-course survey (Figure 6). In the survey nine (81.8%) students reported to have shared either frequently or sometimes new resources and recent news in discussion forums. In contrast, five (45.5%) students revealed that they had never had created illustrations related to the content (e.g., diagrams, concept maps) to share in online discussions, whereas four (36.4%) students stated that sometimes they shared original resources with peers.

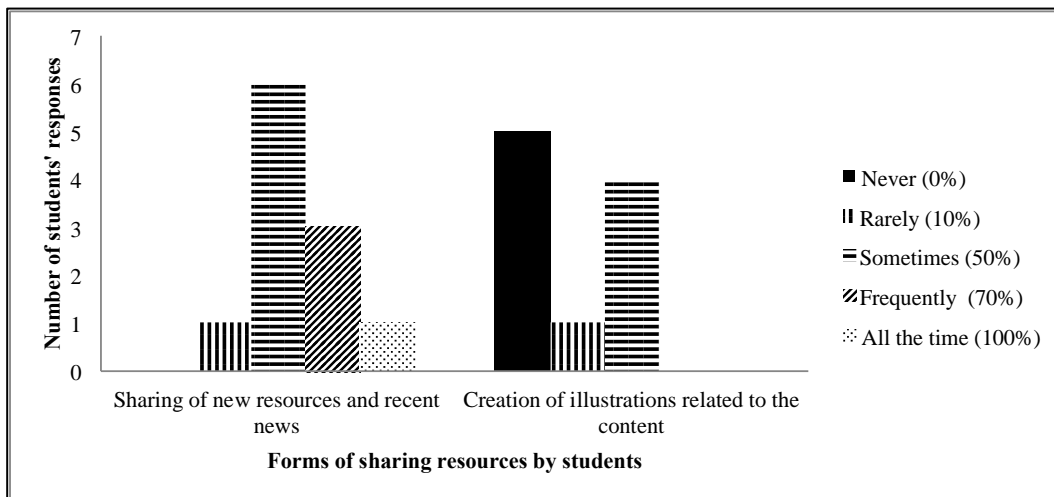


Figure 6. Students' perspectives on sharing resources in online discussions (the end-of-course survey).

When asked how important the particular lecturers' online scaffolding practices were for helping learners succeed in an online course (see Figure 7), providing online participation protocols was considered very important by seven (63.6%) students. In addition, four (36.4%) students perceived participation protocols to be somewhat important. On the other hand, offering peer facilitation guidelines was perceived as very important by five (45.5%) students, and five students considered it to be somewhat important. Setting up areas for informal online discussion (e.g., "Cafe", "Can anyone help") was reported by six (54.5%) students as very important, while three students (27.3%) reported informal discussion spaces to be somewhat important in online learning environments. Surprisingly, three students considered either offering peer facilitation guidelines or setting up spaces for informal discussion as not important at all.

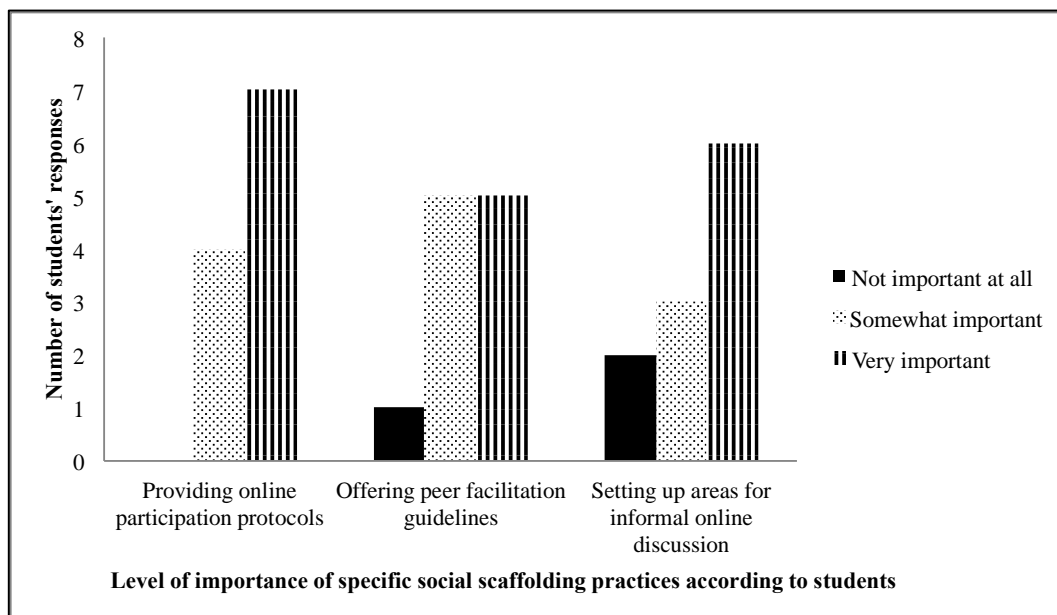


Figure 7. Students' perspectives on the importance of specific social scaffolding strategies used by lecturers (the end-of-course survey).

Students also indicated how often they perceived their peers developing interpersonal relationships and fostering a sense of community throughout the course. More than half of the participants (54.6%) reported that sometimes or frequently their peers developed interpersonal relationships, and two (18.2%) students noticed fellow students building social relationships all the time. On the other hand, four (36.4%) students noticed their fellow students either sometimes or frequently fostering a sense of community, while two (18.2%) students perceived such action happening all the time.

In summary, students used at least three types of social scaffolds in online discussions: Using participants' names and/or a more informal tone of communication, sharing insights and personal or professional experiences about the topic under consideration, and offering visual materials from diverse sources. Furthermore, most students reported that providing online participation protocols, offering peer facilitation guidelines, and setting up areas for informal online discussion are important instructional design strategies for helping learners to succeed in an online course.

4.4 Strategic scaffolding

Strategic scaffolding highlights alternative learning pathways that can be practised in the learning environment to meet different learners' needs and it offers just-in-

time support to assist learners achieve higher levels of understanding (Stavredes, 2011). Strategic scaffolding will be presented as the section before via the discussion of the lecturer's and students' perspectives.

4.4.1 Lecturer's perspectives on strategic scaffolding

In my study three forms of strategic scaffolding used by the lecturer in the online learning environment were identified: Acting as a facilitator of discussion, providing expert advice, and steering students' thinking. The data presented in this section come from the lecturer's interviews and his contributions in online discussions.

4.4.1.1 Acting as a facilitator of discussion

Acting as a facilitator of discussion was mentioned four times in the start-of-semester interview and three times in the end-of-semester interview by Lecturer 1. Furthermore, it was found in one posting in the FOD and in two postings in the SOD, in which Lecturer 1 asked students to further elaborate their statements. An illustration of that is provided below:

So then, Student 9 and Student 13, what kind of change is this? And does it matter? (SOD, Thread Your own experience of change, reference 30, Lecturer 1)

By probing students the lecturer was trying to assist learners to extend their thinking and move them in a productive direction in the online discussions. The following quote from the start-of-semester interview illustrates this issue and it reveals the lecturer's strategic scaffolding within the personal reflection space:

(...) you do get contributions that sometimes have little to do with the topic. And so, it then comes down to us as facilitators of learning to say: That is an interesting contribution, but it seems to be something of a digression (...) sometimes (...) what I will do is write to that person in the confidential stream and say: How does that link? (Lecturer 1, start-of-semester interview)

In this extract Lecturer 1 mentioned to have questioned students in the personal reflection space which can have a potential effect on the online

community as it helps to keep momentum in the discussion and supports learners to think deeply about their comprehension and communication of the content.

4.4.1.2 Expert advice

Despite the fact that there was no mention of expert advice in either interviews by Lecturer 1, expert advice was found in three postings written by Lecturer 1 in the FOD and in five postings in the SOD.

As can be seen in the next posting from the SOD, Lecturer 1 analyses two theories of change based on his own professional experiences and in this way he advises learners on which theory is more applicable in real-world organisations.

I suggest that one of the issues with Lewin's model is that it implies a degree of linearity that simply does not exist! Handy's Sigmoid curve model (...) implies a greater degree of flexibility but brings its own challenges. For example, how do you know where the change is on the curve? (Thread Lewin's model, reference 17, Lecturer 1)

Such form of strategic scaffold furthers the learning experience as it makes the content more vivid and practical. It also helps students to reach a level of understanding that they could not achieve on their own.

4.4.1.3 Steering students' thinking

Steering students' thinking was cited twice in the end-of-semester interview by Lecturer 1, and was observed in four postings by Lecturer 1 in every online discussion. Offering different angles to discussion about a specific topic may guide students towards deep and critical thinking. For example, the next posting demonstrates the lecturer acknowledging a student contribution and offering an alternative perspective:

Hi Student 14, thanks for this explanation. I suggest that there could be different perspectives... There are a number of theorists who argue that management is all about keeping the organisation running, ensuring that the

systems are functioning, that they are sufficient for the needs of the organisation and that the core and subsidiary functions of the organisations are appropriate.

(Thread Response to discussion questions, reference 6, Lecturer 1)

In this extract from the first online discussion, Lecturer 1 appears to be providing gentle words of clarification to Student 14 as her last posting displayed little comprehension of the topic in focus. Thus the lecturer subtly steered the student's thinking, supporting her to reach a further level of understanding.

In summary, strategic scaffolding was enacted by Lecturer 1 in three distinct ways: Acting as a facilitator of discussion, giving expert advice, and steering students' thinking. The subsequent section sheds light on students' perspectives about strategic scaffolds enacted by the lecturers during the course.

4.4.2 Students' perspectives on strategic scaffolding

In the end-of-course survey, students shared their points of view regarding strategic scaffolding practices applied by Lecturer 1 during the semester. Figure 8 shows students' perceptions of the extent to which the lecturer enacted a set of strategic scaffolding actions.

The data shows that almost three-quarters of students (72.7%) reported that the lecturer frequently used questioning to create momentum in discussion, and two students (18.2%) indicated to have observed such action all the time. In addition, seven students (63.6%) estimated that the lecturer frequently increased focus on a topic or task, while three students (27.3%) reported to have sometimes observed such action. Likewise, seven students (63.6%) perceived the lecturer to have frequently exhibited think-aloud modelling, and two students (18.2%) indicated to have seen such scaffold either sometimes and all the time. Furthermore, six students (54.5%) reported that often the lecturer compared students' ideas and acknowledged their ideas; this last scaffold was also indicated by four students (36.4%) to have occurred sometimes during the course. Giving feedback and recognising misperceptions were reported by five students (45.5%) as scaffolds that happened sometimes, whereas three students (27.3%) perceived these actions as frequent. In contrast, six students (54.5%) reported that the lecturer rarely negotiated learning outcomes with them, while four (36.4%) students indicated that the lecturer negotiated either sometimes or frequently

learning outcomes with them. Summing up content was observed to be frequent by four students (36.4%); however, it was perceived by three students (27.3%) as an occasional and rare occurrence, respectively. Being a guide was a strategic scaffold noticed all the time by four students (36.4%); three students (27.3%) reported that the lecturer was sometimes a guide, and two students (18.2%) reported that this strategic scaffold occurred frequently. In regard to challenge students' ideas, nine students indicated that the lecturer had either sometimes (36.4%) or frequently (45.5%) used this scaffold. Three students (27.3%) reported that the lecturer either sometimes or frequently identified areas of agreement and disagreement, and two students (18.2%) indicated such scaffold to have occurred all the time.

In brief, students identified the extent to which lecturers enacted twelve subtypes of strategic scaffolding throughout the course. The encounter of the lecturer's and students' perspectives of strategic scaffolding during the course point to two main teaching practices, each compounded by distinct instructional support strategies. Firstly, the lecturer acted as a facilitator of discussion through the frequent use of questioning to create momentum in online discussions, via often increasing the focus on topic and task and by enacting think-aloud modelling. Secondly, the lecturer steered students' thinking by frequently comparing their ideas in online discussions. In contrast, the majority of students reported that the lecturer either rarely or sometimes negotiated learning outcomes with them.

Next, peer scaffolding actions by students will be discussed based on evidence from online discussions and surveys.

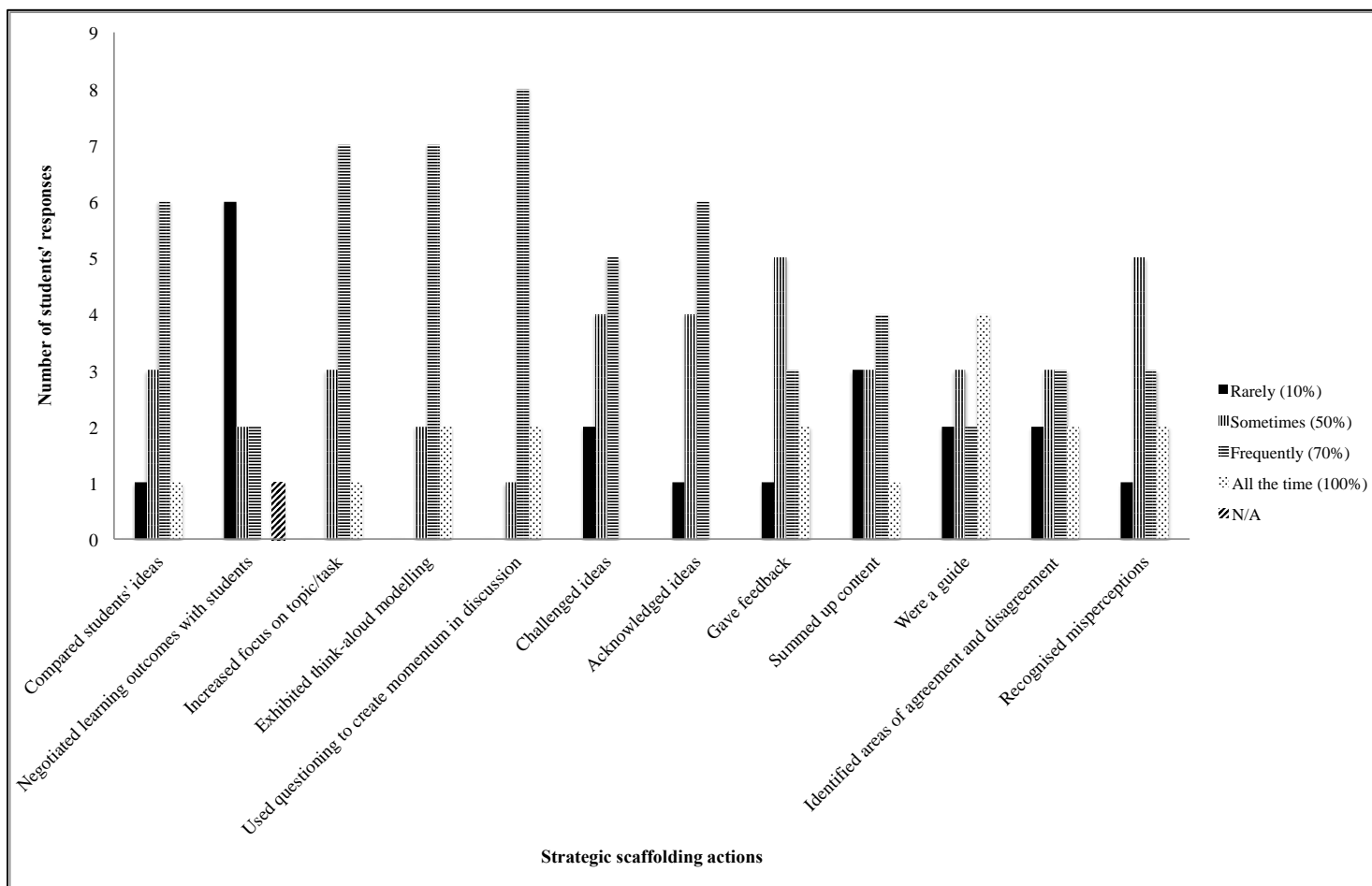


Figure 8. Students' perspectives on strategic scaffolding actions performed by lecturers (the end-of-course survey).

4.5 Peer scaffolding

Peer scaffolding is intimately related with peer facilitation. Peer facilitation is based on horizontal relationships between peers who apply a wide range of techniques to facilitate learning in asynchronous online discussions (Chan, Hew, & Cheung, 2009). Once the learners find themselves facilitating each other's learning, the lecturer's role changes to that of a fellow peer and resource for additional guidance when needed (Conrad & Donaldson, 2012).

In the case study reported here, these techniques are called peer scaffolds. In the following section, eight peer scaffolds will be described based on evidence from online discussions and student surveys. Data from both students and Lecturer 1 were used for this analysis. In the end-of-course survey, nine students (81.8%) reported that the lecturer either sometimes or frequently encouraged constructive peer feedback throughout the course. Figure 9 summarises the frequency with which students used peer scaffolding strategies in their postings in the first and second online discussions. As shown in Figure 9, acknowledgment of peers' postings was found in 19 students' contributions in the FOD, decreasing to nine postings in the SOD. Agreement with others' ideas was the most frequent peer scaffold, with a total of 21 postings in the FOD and 13 in the SOD. Surprisingly, the number of postings exhibiting students' answering questions raised by peers approximately tripled in the SOD where there were 18 postings containing this peer scaffold. Moreover, initiating questions was a strategy observed in six students' postings in the FOD and in three students' postings in the SOD. Summarising content was found in seven postings in the FOD and five postings in the SOD. Asking for clarification (four postings) and development of self-reflection (three postings) were observed in the FOD and each of these increased to six contributions in the SOD. Surprisingly, disagreement with other's ideas was evident in very few students' contributions (five postings) across both FOD and SOD.

Agreement with others' ideas was the most prominent peer scaffold used by students, followed by acknowledgement of peers' postings, and answering questions, respectively. The least frequent peer scaffold consisted of disagreement

with others' ideas. Other less frequent peer scaffolds enacted by students were initiating questions and development of self-reflections.

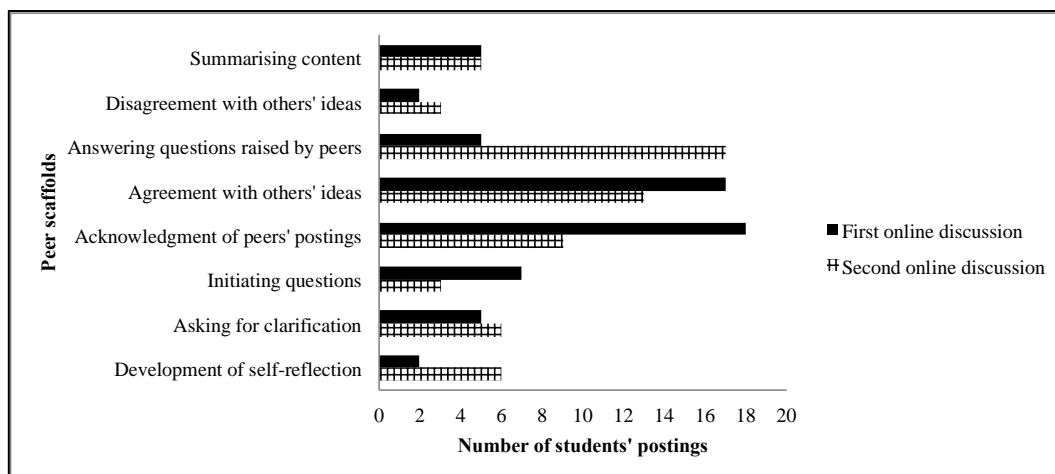


Figure 9. Number of students' postings exhibiting peer scaffolds in the first and second online discussions.

Next, each peer scaffold is illustrated by an example from online discussions.

4.5.1 Agreement with others' ideas

This kind of scaffold reflects student analysis of others' postings or resource(s) in a critical and constructive manner. Agreement with others' ideas was a scaffold present in 34 postings (Students 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13). The next postings illustrate such peer scaffold:

Totally agree Student 2. I guess that is how schools may differ slightly from business (...) I do agree that for effective leadership, there needs to be good management of the school. You will find that great leaders are also exceptional managers.

(FOD, Thread Ideology: schools vs business, reference 11, Student 6)

Hi Student 12, I agree with you, aren't we always afraid of change? Just because we won't be in our 'comfort zone' anymore. It is always good for a new principal/boss to get to know the place, what people feel strongly about, what

worked well according to them and what didn't before then making their choice on what is going to change and why (...)

(SOD, Your own experience of change, reference 31, Student 1)

4.5.2 Disagreement with others' ideas

Either challenging others' perspectives or offering alternative interpretation, indicating gaps, discrepancies, or raising concerns (Chan, Hew & Cheung, 2009) are all aspects of this peer scaffold. Disagreement with others' ideas was a strategy seen in five students' postings (Students 4, 7, 10, 13, 14). The following example shows a student respectfully disagreeing with Lecturer 1:

Interesting Lecturer 1, With your note about the questions not having anything to do with leadership per se, with great respect, have to disagree with you. I think that teachers want a leader who will lead by example (...) I think that 'street cred' is something a good leader must have.

(SOD, Thread Challenges, reference 7, Student 4)

Disagreement with others' ideas is a common scaffold in open and safe online communities. It shows capacity of analysis, a skill which is greatly needed in digital spaces and academic settings. The next example illustrates a student disagreeing with Student 4's point-of-view regarding the need of school leaders to have teaching experience:

Student 4, I don't necessarily feel that a great school leader needs to have teaching experience (...) I feel that teachers want school leaders who are 'on their side' (...) This may involve assisting the teacher, modelling strategies or providing support systems that work without undermining the teacher.

(SOD, Thread Challenges, reference 16, Student 14)

4.5.3 Acknowledgment of peers' postings

Showing appreciation of others' contributions may take many forms (e.g., offering thanks for a contribution or acknowledging others for a helpful suggestion). Acknowledgment of peers' postings was a scaffold observed in 28 postings (Students 1, 3, 4, 5, 7, 8, 9, 12, 13). The following quotes illustrate this scaffold:

Thanks for your brainstorm Student 8. I like the way you have included time to learn, grow and improve within your flexibility section. This could be where frustration sets in for the change agent (...)

(SOD, Thread Building capacity, reference 2, Student 3)

Hi there Student 3 and Student 15, Thank you for your responses. I really like the list of differences between leaders and managers by Warren Bennis, Student 3, that really encapsulates it for me. I also feel a good manager/ leader does grow leaders too Student 15.

(FOD, Thread Ideology schools vs business, reference 4, Student 4)

These quotes show students thanking others for their earlier contribution as well as offering praise regarding the way those students elaborated on a specific subject matter.

4.5.4 Answering questions raised by peers

Clarifying a posting in response to request for elaboration or feedback were common peer actions present in 23 postings (Students 1, 3, 4, 6, 7, 9, 11, 12, 13, 14). One instance of a student answering a question from peers is found in the quote below:

Hi Student 7

Sorry for taking so long to reply. I had no part in this decision making and must confess, I was one of the staff 'afraid' of this change to IT as I am one of the older ones. Luckily I am also keen to learn new stuff and found that the more I knew about IT, the easier it became to teach myself (...)

(SOD, Thread Example of change, reference 21, Student 1)

In this posting Student 1 shared her insights about how she coped with a change process in her school as a response to a question raised previously by Student 7:

What level of participation did you have in any of the decision-making for the IT project and did that empowerment make a difference to you engaging in the change?

(SOD, Thread Example of change, reference 16, Student 7)

Another example of this peer scaffold can be seen in the next posting:

Hello Student 4, I liked the home language hour and it worked well for many of our students (...) After looking at the Sigmoid curve presentation, I wondered if we had terminated the program prematurely (...) In answer to your question, I was sad that the language hour did not continue. I like the concept and saw many benefits.

(SOD, Thread Charles handy's sigmoid model of change, reference 11, Student 14)

Students' postings displayed different types of responsiveness. Answering questions raised by peers, acknowledgment of peers' postings, and agreement and disagreement with others' ideas were types of responsiveness which characterised peer scaffolding in this study.

4.5.5 Asking for clarification

This scaffold refers to asking questions to seek clarification or stimulating elaboration (Ng, Cheung, & Hew, 2012). Eleven postings (Students 4, 5, 7, 10, 11, 12, 14) were found with evidence of students asking peers for clarification. For example:

I think that the thinking and philosophy that we subscribe to (...) plays an important role in the decisions we make and to our practice in general (...) surely that is the definition of 'praxis'? Perhaps what changes is our appreciation of how those things are connected? I also wonder whether you are talking about the value of theory, or the value of professional reading in general?

(FOD, Thread There is nothing so useful as appropriate theory?, reference 11, Student 5)

In the previous example there were three consecutive questions in which the first two stimulate elaboration and the third one seeks clarification from peers. In the next example, Student 14 is giving feedback to Student 16's posting through asking her further questions in order to deepen their understanding of how timetable changes unfolded at that particular school:

Student 16,

Timetable changes are always controversial (...)

I was wondering:

- 1. What was the rationale for the timetable change in your case?*
- 2. Has this change brought improvement?*
- 3. Do the Classroom walkthroughs have a particular focus? (...)*

(SOD, Thread Charles handy's sigmoid model of change, reference 12, Student 14)

4.5.6 Initiating questions

In this peer scaffold, the student introduces a new topic and invites others to contribute or enquires about others' point-of-view (e.g., "any thought?", "I am interested to see what others think"). Such strategy functions as an invitation for students to participate in discussions which was used in nine postings (Students 3, 4, 5, 10, 11, 14). Below are some examples:

I wonder if the use of the word 'empowerment' will fall out of fashion in Educational Management in the way it has in Sociology? The thinking there is that if you 'empower' someone (...) you are (...) 'giving away' power (...) A more current approach for people working to alleviate oppression, for example, is to work as an ally. At the very least I think it's closer to the kind of collaboration Senge (1990) was advocating.

(FOD, Thread Bureaucratic and human relations theory, reference 17, Student 5)

In this example Student 5 introduces a new topic in the online discussion, as well as shares her definition of the topic. After that the student makes a connection between her definition of empowerment with the notion of collaboration from a course reading. Although there is no explicit invitation for peers to contribute, this posting generated eight contributions about empowerment. The next posting offers another example of initiating questions:

(...) All the literature I am reading points towards finding people who share vision, or including a bottom up influence into the vision to get buy in from all. People like to feel that their ideas are valued. I also think review, reflection and therefore adaptability, rather than high accountability and hierarchical authority is also really key here (...)

What do you think?

(SOD, Thread Building capacity, reference 0, Student 4)

In summary, questioning was observed in two distinct forms of peer scaffolding in the online discussions: Asking for clarification and initiating questions.

4.5.7 Summarising content

Synthesising content or an interpretation of a series of postings characterises a metacognitive scaffold found in 12 postings (Students 1, 4, 7, 8, 12, 13, 14). For instance, Student 8 developed a summary with key points regarding ‘building capacity’ which was shared in the following posting:

I created a brief brainstorm under 'building capacity' (...) to give me some direction.

Inclusive: all staff, board, community

Bottom-up influence: everybody learning, all staff, including management

Meaningful involvement: all contribute, value contributions (...)

In brief everything seems to point to building a strong team!

(SOD, Thread Build capacity, reference 2, Student 8)

In the next example, Student 7 created a synthesis of students' postings where she developed a relationship between management theories and leadership in schools:

Many of our postings have begun to unpack leadership in schools, the differences between styles, models, practices, the art of leaders and followers. This can be an individual charismatic view of leadership or a more collective leadership within and across schools. We have also begun to further unpack the difference between leading and managing as a way of being (...)

(FOD, Thread The who of how and why organisations work the way they do, reference 0, Student 7)

Sharing a summary or a study guide with peers supports the online community as it offers a baseline for the exploration of alternative perspectives while widening the breadth of students' understanding.

4.5.8 Development of self-reflection

Learner-self interaction (Soo & Bonk, 1998, June) consists of "a learner's personal reflection on the learning-related content, the learning process and her personal understanding" (Bonk & Khoo, 2014, p. 86). Development of self-reflection was a peer scaffold present in nine postings (Students 1, 4, 6, 13). For example, Student 6 posted the next contribution about his experience of change:

When I first arrived at my current school the Health curriculum was taught in blocks (...) the more experienced staff (...) would often substitute these lessons for practical PE lesson (...) the Health area was not adequately resourced and we only had three timetabled lessons in a six day timetable. The consequence of this was students were receiving an often brief health education (...) More importantly, we were losing an excellent students to our subject, as their belief was that PE was all physical skills (...)

As the teacher in charge of the Health curriculum, I wanted greater buy in from the more experienced staff (...) [my] first step was to consult with PE staff and students about the essential elements and topics we deemed relevant to teach and learn. I then used these suggestions to develop comprehensive lesson plans

and resources for the whole year. The second step, was to negotiate an extra timetable health lesson. The results was that the staff were more comfortable in teaching Health topics (...) the level one PE numbers increased and students were more settled in the classroom environment (...) I guess I went through Lewin's process of unfreezing, moving and refreezing.

(SOD, Thread Your own experience of change, reference 26, Student 6)

Student 6's narrative shows a workplace experience in which Lewin's model of change is embedded throughout the process of change development. This instance of self-reflection assists not only the subject that shared the narrative to deeply comprehend the topic and achieve his learning objectives but also his peers, who are offered a unique real-world example of change and who may feel compelled to share their own experience of change with others.

A self-reflection can also unfold as a personal narrative, as seen in Student 4's account:

After seeing your comment, and reflecting, I see and feel that I need much more experience in working with different contexts of schools and with different types of leader. I started teaching 8 years ago, have taught (...) at the same school all that time (...) Having been somewhat insulated in a 'bubble' I have missed out on learning from other types of leader. I think this is why I am enjoying this paper so much, as it is letting me learn so much from all of you (...) Thanks for making me think more deeply.

(SOD, Thread Challenges, reference 17, Student 4)

In addition to peer scaffolding practices in online discussions, students' perspectives about peer scaffolding were explored. In the end-of-course survey, students were asked about how often they enacted different forms of peer scaffolding throughout the course (see Figure 10).

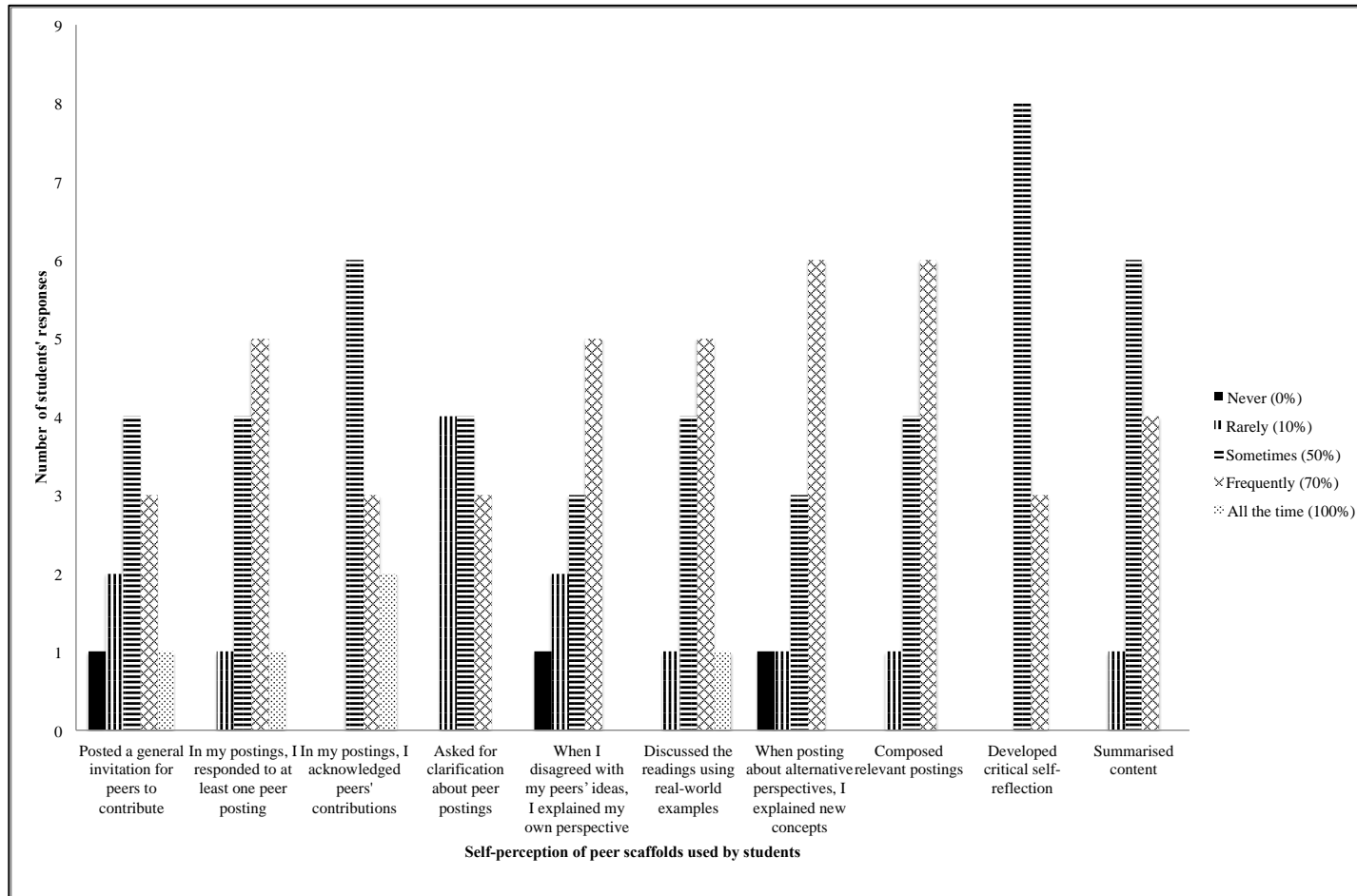


Figure 10. Self-perception of peer scaffolding practices as perceived by students (the end-of-course survey).

Almost three-quarters of students (72.7%) reported to have sometimes used a critical self-reflection in online discussions, while three students (27.3%) indicated to have frequently composed a self-reflection. More than half of the students (54.5%) asserted frequently explained new concepts when posting about alternative perspectives as well as often composed relevant postings (relevant postings in this study refer to using references to support students' arguments). The same number of students (six students) revealed that they sometimes acknowledged peers' contributions and that they summarised content in their postings. Five students (45.5%) reported to have discussed frequently the readings using real-world examples and often having disagreed with peers' ideas along with explaining their own perspective. In addition, four students (36.4%) indicated to have sometimes responded to at least one peer, whereas five students reported to have answered frequently to at least one peer in their contributions. In regard to posting a general invitation for peers to contribute, four students (36.4%) perceived to have implemented this scaffold sometimes, whereas three students (27.3%) reported to often have invited fellow students to participate in the discussion. Four students (36.4%) admitted that they rarely asked peers for clarification about their postings, whereas 63.7% of students indicated to have either sometimes or frequently asked fellow students for elaboration.

According to students, the most prominent peer scaffold occasionally used by them was the development of critical self-reflection. In addition, students frequently composed relevant postings and often provided alternative perspectives, along with explanation of new concepts. Acknowledgment of peers' contributions and summarising content were also peer scaffolds widely practised by students.

In short, students exhibited eight subtypes of peer scaffolding: Agreement with others' ideas, acknowledgment of peers' postings, answering questions raised by peers, summarising content, asking for clarification, initiate questions, development of a self-reflection, and disagreement with others' ideas.

To summarise, this chapter presented the findings of this study based on lecturers' and students' perspectives of online scaffolding. From the conceptualisation of this construct, several types of online scaffolding were observed during the online course, which included procedural scaffolding, social scaffolding, strategic scaffolding and peer scaffolding. The following chapter will

provide a discussion of these findings using the lenses of the transactional distance framework (Moore, 2013) and other literature on online scaffolding.

Chapter 5: Discussion

The focus of this research was to investigate online scaffolding strategies enacted by lecturers and students in a fully online educational leadership course across time. It was hoped that a better understanding of lecturers' and students' perceptions and actions would provide insights about how to strengthen online scaffolding practices in an educational leadership course. The study addressed the following four research questions:

1. How do lecturers in this course understand online scaffolding?
2. How do students in this course understand online scaffolding?
3. What types of online scaffolding do students in this course expect?
4. What types of online scaffolding are implemented by the lecturer and students in this course?

Using a mixed-method research design, qualitative and quantitative data were collected using semi-structured interviews, online surveys and observation of forum discussions. Participants in the study included two lecturers and 14 post-graduate students. Data from both lecturers will be discussed uniquely in the section about lecturers' expectations. The remainder of the research questions will be based on Lecturer 1's data, which were triangulated across the different methods applied. The data were coded and analysed, guided by the conceptual framework of the transactional distance theory-TDT.

In the previous chapter, findings from several sources were organised into categories of scaffolds in order to provide a thorough and readable account of online scaffolding in the educational leadership course. In the current chapter, findings will be discussed using the TDT and the literature on distance education.

The implications of these findings may offer context-based suggestions for online pedagogy in this course and possibly for tertiary online teaching in general. The chapter concludes with an overview summary that encompasses the key points of this study.

5.1 Discussion of findings

5.1.1 How do lecturers understand online scaffolding?

Lecturers' perspectives of online scaffolding were categorised in four main themes: Ideas about online scaffolding, learner autonomy, scaffolding changes over time, and over scaffolding. I will discuss each of this in turn.

The lecturers perceive themselves as facilitators of learning in order to help students become experts in their chosen field. To accomplish this lecturers used multimodal resources and questioning (i.e., resource and strategic scaffolds). In this sense lecturers develop course structure, materials, and procedures prior to the start of the course itself. In this way, in terms of structure of the course, lecturers provide students with little autonomy.

W. Anderson (2013) explains that in exercising more or less autonomy in the learning process, students are taking or ceding more control. Since academic study consists of exploring and researching, lecturers made it clear to students from the outset that they would encourage intellectual independency through not excessively intervening in online discussions but giving input when needed. In this course the lecturers believe that students are responsible for their own learning, which was encouraged through allowing them to follow their own learning interests in assessments when possible. In addition, the annotated bibliography assignment provided students with an opportunity to contribute to the online discussions with their chosen readings. In the TDT learner autonomy is defined as the extent to which the students decide the learning outcomes, course goals, learning experiences and assessment landscape (Moore, 1993, 1997). Moore (1993, 1997) argues that students should be responsible for their own learning, which is exactly what lecturers believe. However, in practice, by providing limited opportunities for students to exercise autonomy they give them limited space to become autonomous in Moore's sense. Through these analytical lenses it is possible to notice a contrast between lecturers' aims for students to be autonomous learners and actual practices for fostering learner autonomy and self-regulation in an online course.

Lecturers also indicated that their scaffolding changes over time. In terms of procedural scaffolding, lecturers start the course with extensive welcoming of students and orientation scaffolds to guide them in their learning experience. After

that, weekly announcements at the news forum are made accompanied by the gradual uncovering of content in each module. Furthermore, online scaffolding usually increased during periods that preceded the submission of assignments. During such periods students would ask lecturers for clarification of the assessment's criteria and request formative feedback on their assignment's drafts before final submission. Therefore lecturers' practices of online scaffolding in this course did not resemble the linear pattern of gradual fading of scaffolding as described in earlier studies (e.g., Pea, 2004; Pifarre & Cobos, 2010; Sharma & Hannafin, 2005), rather it was a non-linear process characterised by progressive fading of scaffolding accompanied by peaks of dynamic instructional support.

These peaks of dynamic instructional support during the development of assignments can be seen as adaptive scaffolding (Azevedo et al., 2004). Adaptive scaffolding helps students' self-regulated learning through teacher continuous monitoring of students' developing understanding and provision of timely feedback (Azevedo et al., 2004). It implies a delicate balance of negotiation between providing assistance while stimulating a student's own self-regulatory behaviour (e.g., planning, setting learning goals, and monitoring their emerging understanding) (Azevedo et al., 2004).

Lecturers' perspectives and actions resonate with online teachers' efforts towards the decreasing of the transactional distance gap. According to Stein, Wanstreet, and Calvin (2009), at the start of an online course, lecturers make themselves available to welcome and encourage learners to communicate with peers in the course and to let them know that their contributions are valued. With time, students feel more confident in their capability to learn in the online environment, thus direct interaction with the lecturer can be reduced (Stein et al., 2009). This reduction of transactional distance may bring students into a new zone of proximal development in which new instructional support strategies may be applied to support further learning (Stavredes & Herder, 2013).

Lecturer 1 was concerned about over-scaffolding because, in his view, the excess of scaffolding would create a teacher-centred pedagogy, which could harm student learning. Too much scaffolding may be understood as excessive teacher control over the learning experience, resulting in fewer situations in which learners could exercise autonomy over their own knowledge building process.

Stavredes (2011) stressed the need to create balance between the amount of support and student autonomy in order to maximise learning:

It is important to give learners just enough support to allow them to reach the next level of understanding. It is important to remember, however, not to provide too much support, such that learners lose motivation to try hard, or too little support, such that learners stop trying because they don't know how to proceed. (p. 101)

Lecturers' views are consonant with Stavredes (2011) in regard to the risk of providing too much support to students and ultimately over-controlling their learning experience. In this study lecturers made it clear from the outset that they would encourage intellectual independency through not excessively intervening in online discussions but giving input when needed.

In the transactional distance theory, course flexibility is understood as the extent to which an educational programme can integrate or be responsive to each student's individual needs (Moore, 1993, 1997). In this view the course's learning outcomes, teaching practices and assessment methods, in short, the structure of the course, will reflect different levels of flexibility and/or rigidity. In my study lecturers made it clear that they do not negotiate learning outcomes with students, except in assessments, as long as students' learning interests fit the assignment criteria. The fact that lecturers do not negotiate learning outcomes with students was confirmed by almost half of the students who said that lecturers rarely negotiated learning outcomes with them. Moore describes structure as the latitude students have in influencing learning outcomes, course sequence, assessment landscape and so on (Shearer, 2009). Using Moore's notion of course structure, it can be said that the educational leadership course in my study has elements of a high structure course, since learning outcomes, course sequence, and assessment landscape was fairly well laid out before the start of the course. At the same time, this course also has elements of a low structure course, as the course design invites students' contributions in the form of chosen readings and topics in assessments. Shearer (2009) argues that in tertiary education, structure is low only at the dissertation/thesis stage when the student has greater control over all the learning process. All courses at the tertiary level tend to be designed prior to the

beginning of the semester; indeed for years the field of Instructional Design has developed highly structured courses that help conduct a student through the learning process (Shearer, 2009). Therefore it is not surprising that lecturers design a high structure course prior to the beginning of the course itself.

In conclusion, lecturers' accounts of their online scaffolding were characterised by reflections on resources and strategic scaffolds, students' self-regulation, non-linear patterns of online scaffolding over time and the need to create a balance in the amount of support for promoting student learning. The next section will present a discussion of students' perspectives on online scaffolding and how they compare to lecturers' views.

5.1.2 How do students understand online scaffolding?

From the answers on open-questions in surveys, one could recognise several themes about online scaffolding: Ideas about scaffolding, lecturers' responsiveness towards assignment development, formative and timely feedback, coaching, and peer feedback.

Students' understanding of online scaffolding resembles the socio-constructivist notion of scaffolding: The provision of (or allowing for) techniques to support learning underlines instructional support strategies which may be enacted by either lecturers or students as far as the design and culture of the course allow and/or encourage such online engagement. In addition, students thought that scaffolding is only offered when needed and that it should be purposefully withdrawn to foster learner autonomy. A practical example of online scaffolding mentioned by students refers to lecturers' strategy of gradually releasing specific content during the course. At the same time, students in my study expected opportunities to exercise learner autonomy. Moore and Kearsley (2012) expanded the construct of learner autonomy by relating it to the Vygotskian notion of handover in which by exchange of meanings and construction of a shared understanding, within each learner's zone of proximal development, students progressively take control of the process of learning. Thus the dialogue between lecturer (or a more competent fellow student) and learner is characterised by a shift in control of the learning process from the lecturer to the learner (Moore & Kearsley, 2012).

Furthermore, students emphasised the provision of support towards their assignment development. In this sense lecturers' responsiveness before and after assignments appears to be an important element of learner satisfaction. Some students said that lecturers mentored them during assignment development. It seems that students valued opportunities for one-on-one interaction between lecturer and student, in which lecturers guided students by modelling, academic counselling and scholarly support (Murphy, Mahoney, Chen, Mendoza-Diaz, & Yang, 2005). Students' emphasis on support reflects what Boettcher and Conrad (2010) call effective assessment in online courses. According to these authors, effective assessment involves getting to know learners as individuals and lecturers dedicating more time in mentoring and coaching.

In this study students described teaching strategies that resembled the notion of coaching: Provoking reflection through questioning and educational resources, providing direction, encouragement, and feedback. Likewise, students pointed out the importance of guidance in this online course. Laurillard (2012) argues that guidance (planned support the lecturer designs to warrant that students spend their time productively) is essential for learning due to the difficulty and complexity of the inquiry process. Furthermore, students' notion of coaching resonates with Boettcher and Conrad's (2010) view on the shift of faculty roles in online courses towards coaching and mentoring. In this view online courses are enablers of bottom-up development of knowledge in which learners are encouraged to interact with each other and the content resources to build their knowledge instead of relying on top-down delivery of lectures. In this approach the teaching time in an online course shifts towards elaborating mini-lectures and vignettes, preparing facilitation and community building opportunities, and monitoring and guiding students in their learning journeys (Boettcher & Conrad, 2010).

Formative and timely feedback was indicated by a large number of students. Research suggests that tertiary students are interested both in feedback related to task outcomes and to personal development strategies applicable to future actions in their workplaces (Merry, Price, Carless, & Tara, 2013). In this sense feedback guides students to comprehend the nature of quality standards as well as fosters capability for making complex judgments (Carless, 2013). In the context of this educational leadership course, timely feedback was perceived as a

kind of dialogue for students which should take place throughout the learning process, rather than being offered only at the time of formal assessments (Carless, 2013). This study corroborates Carless's (2013) reasoning as students perceived timely feedback as response given within 24 hours by either lecturers or fellow students. The actual context of mass tertiary education, limited resourcing, and multiple demands on lecturers makes dialogic feedback a challenging support strategy that can only be feasible and sustainable when the student role in generating and applying feedback is improved (e.g., through guidelines) (Carless, 2013).

Indeed, students mentioned peer support which has in its core peer feedback. Peer feedback can support the learning process by offering an intermediate check of performance based on criteria, along with feedback on strengths, weaknesses, and/or hints for enhancement (Gielen, Peeters, Dochy, Onghena, & Struyven, 2010; Reese-Durham, 2005). On the other hand, the peer assessors benefit from this transaction as they observe other learners' examples and approaches, as well as internalises the criteria and standards (Gielen et al., 2010). Moreover, peer feedback encourages learner participation in online discussions (Xie, 2013). Palloff and Pratt (2007) contend that the expectation that students will provide meaningful feedback to one another should be considered when designing an online course in order to create connections among students and promote the sharing of alternative perspectives. In a study by Ertmer et al. (2010), students who received peer feedback felt more confident when posting and responding in online discussions in comparison to students who did not receive peer feedback. Reese-Durham's (2005) findings revealed that students perceived that peer feedback was helpful, meaningful and effective. Kuskis (2006) proposed that student-student dialogue along with lecturer-student dialogue may reduce transactional distance. In this study peer feedback was acknowledged by students, who perceived their peers as a source of online scaffolding.

The findings of this study revealed several similarities and dissimilarities between lecturers' and students' perspectives on online scaffolding. Both groups believed that online scaffolding should include procedural and strategic scaffolding (e.g., resources and questioning) as well as adaptive scaffolding, which would be provided only when needed and strategically withdrawn in order to foster learner autonomy. The main difference between lecturers' and students'

perspectives was observed in their understanding of learner autonomy. Lecturers' understanding of learner autonomy highlights the importance of self-regulation processes and places a great deal of control of the learning experience on students, as one lecturer said, *students are responsible for their own learning*. This statement demonstrates lecturers' focus on intellectual independency, and supports Moore's (1994) strong version of learner autonomy, in which students initiate, lead, and control much of the learning process. On the other hand, students appear to perceive learner autonomy as both intellectual independence and interdependence of lecturers and peers.

Some studies have extended the individualistic notion of autonomy in ways that places relationships and relating to others at the core of the development of autonomy (W. Anderson, 2013; Boucouvalas, 2009; Chen & Willits, 1999; Eneau, 2008). For example, Chen and Willits (1999) defined autonomy as "the learner's perception of both independent and interdependent participation in a learning activity and involved both the student's ability to learn individually/self-directedly and his or her preference or need for collaborative learning" (p. 48). In Chen and Willits's (1999) study, independence consisted of the capability to develop a personal learning plan, finding resources for study and learning without a substantial amount of guidance. Elements that reflected interdependence included learning as a member of a team, preferring to learn in a group, and sharing effort and responsibility with colleagues (Chen and Willits, 1999). In my study students exercised both independence, through finding resources and writing annotated bibliographies based on them, and interdependence as students reported to have observed peers building relationships and fostering a sense of community while collectively constructing knowledge.

The present section delved into students' perspectives on online scaffolding which was characterised by ideas about scaffolding, support towards assignment development, coaching, feedback as dialogue, and peer feedback. The subsequent section will discuss students' expectations regarding distinct types of online scaffolding in this course.

5.1.3 What types of online scaffolding do students in a fully online educational leadership course expect?

Students expected three distinct categories of instructional support strategies: Procedural scaffolding, social scaffolding, and strategic scaffolding.

In terms of procedural scaffolding, students want lecturers to set up and frequently monitor public and private communication spaces. Such spaces include Q&A section, forum discussions, personal reflection spaces, and lecturers' e-mail boxes. Some students also expected lecturers to provide face-to-face (F2F) opportunities. Such finding may suggest that students expect lecturers to use both synchronous and asynchronous activities for lecturer-student interaction.

Educational leadership students also expect lecturers to use social scaffolding strategies. An array of subtypes of social scaffolding was suggested by students, including fostering a sense of community, setting up an informal space, grouping students, and being present. Drouin (2008) study showed that asynchronous discussion threads and students' perceived interaction with peers and the lecturer were correlated with students' perceived sense of community (SOC). A review of student comments showed that there are students who not only do not expect SOC, but also do not feel a need for SOC in an online learning environment. My findings corroborate Drouin's (2008) results as in all the open-questions in the surveys students did not mention the need for SOC, except for the fact that one student out of 11 expected lecturers to foster a SOC. In contrast, grouping students was an expectation expressed by students in this course. Groups can offer learners in-depth understanding of the topic in focus, enable them to develop analytical skills in online research and create long-lasting professional connections (Palloff & Pratt, 2007).

In terms of strategic scaffolding, undergraduate students in Forbes's (2012) study indicated that they wanted lecturers to be present, use questioning to keep momentum, be a guide, sum up content, give feedback, acknowledge and challenge their ideas, and share personal perspectives. My findings replicated those of Forbes's (2012), and regardless of the different levels of study, students still expect the same types of strategic scaffolds in an online course. In my study the majority of the students indicated that they would like the lecturers to be frequently present in the online course. Insightful prompting, reassurance and

encouragement were words used by students to characterise lecturers' sense of presence. Perhaps sense of presence was rated as very important due to the fact that many students were new to online learning and the perceived presence of the lecturer would help them to diminish uncertainty, enabling a more positive and meaningful learning experience (Hawkins, 2009).

In my study and Forbes's (2012) study, students expected lecturers to be regularly monitoring and participating in online discussions. Furthermore, students, in both studies, expected lecturers to allow for peer support to take place, and lecturers to be on stand-by for answering questions when needed. Moreover, both studies showed that students acknowledged lecturers' expectations and actions of standing back from online discussions in order to give space for students' thinking to develop in collaboration with peers. In addition, both graduate students in this study and undergraduate students in Forbes's (2012) expected lecturers to sum up content, give feedback, acknowledge and challenge students' ideas. In particular, lecturers' timely and formative feedback on postings, assignment drafts, and assignments were emphasised by students because these actions would help them know if they were on the right track and what they needed to do to successfully meet their learning needs. Therefore my findings corroborate Forbes's (2012) students' expectations regarding lecturers' actions.

Educational leadership students also reported that they wanted lecturers to frequently use questioning to keep momentum in discussions. Shearer (2009) explains this strategy as a critical and convergent form of dialogue in which questions and statements move the discussion to a definite conclusion. This type of dialogue has a question-statement-question format where the lecturer models inquiry and supports learners construct on current mental schema (Shearer, 2009). Such encouragement of expansive questioning promotes deep exploration of a subject matter and the development of critical thinking (Palloff & Pratt, 2007).

In my study graduate students also expected lecturers to be a guide. Students described guidance as facilitation and well-structured content in the online environment. Lehman and Conceição (2014) posit that facilitation encompasses creating teaching presence by stepping back and encouraging learners to take the lead, engaging learners in in-depth discussions, requesting active participation, and challenging learners through questions. Complementary to this Nola Campbell defined well-structured content as "course content efficient

and effective for students” (Campbell, 2003, p. 11). For her, educational resources need to target students’ needs and readiness (Campbell, 2003). In my study students mentioned the need to create links between course learning outcomes and suggested resources, which would add relevance and demonstrate a form of guidance to students’ learning process.

Other expectations mentioned by students are related with the assessment landscape. To illustrate, checking planning or drafts of assignments and establishing a flexible approach towards assignments were students’ expectations in this online course. One student, who is a regional leadership facilitator, suggested that students should decide which weighting each assignment would have according to their learning interests. Such a proposal is in line with the concept of course flexibility (Moore, 1993, 1997), which defines the extent to which an educational programme can calibrate or be responsive to each student’s needs. In other words flexibility characterises the extent to which the student is allowed and encouraged to design his or her learning pathway (Veale, 2009). In this sense this student gave a valuable suggestion in order to make this course more flexible while offering an opportunity for students to exercise learner autonomy.

In addition, timing of scaffolding was mentioned by some students in the end-of-course survey as a reason for feelings of uncertainty and frustration during the course. Namely, some students experienced slow feedback in the Q&A section, which caused them frustration, as they were delayed in developing their assignments. This situation points to the importance of timely feedback from lecturers and the provision of basic instructional resources earlier in the online course. Considering graduate students’ life circumstances, such as full-time work, family responsibilities, and other commitments, it is important to facilitate online learning through providing clear and precise guidelines and timelines for each week and task of the course. Such procedural scaffold, which helps adult learners to manage their time, may contribute towards student persistence. Therefore the findings indicate that students expect scaffolding by time. According to Moore (1997), when course structure falls below a specific threshold, the sense of transactional distance can raise as a result of potential learner confusion and dissatisfaction. Such learner confusion and dissatisfaction were observed when students commented about the slow feedback in the Q&A section.

In summary, students expect procedural, social and strategic scaffolding in this online course. The students' expectations discussed seem to gravitate around set up, frequent monitoring of, and participation in communication spaces, and facilitating learning through questioning and well-structured content. The next section will discuss the types of online scaffolding that were enacted by the lecturer and students in this online course.

5.1.4 What types of online scaffolding are implemented by lecturers and students in a fully online educational leadership course?

A myriad of types of scaffolding were observed throughout the educational leadership course, either being enacted by the lecturer or performed by students: Procedural scaffolding, social scaffolding, strategic scaffolding, and peer scaffolding were identified along with diverse instructional support strategies which will be discussed in the following section.

5.1.4.1 Procedural Scaffolding

Procedural scaffolding helps students to navigate the course website and engage in learning activities (Stavredes, 2011). The main goal of this type of scaffolding is to describe resources. According to Lehman and Conceição (2010), procedural scaffolding also assists students to understand how the online environment can be accessed, how to use the course technology, and how to become active members of the learning community. In my analyses I followed the categories of procedural scaffolding developed by Stavredes (2011): Orientation scaffolds, expectation scaffolds and resource scaffolds.

In this study orientation scaffolds were characterised by a welcome letter sent to students before the commencement of the course along with the lecturer welcoming and offering guidance during the beginning of the course. In this letter the lecturer introduced the “Moodle Support Information” course in order to invite novice learners to familiarise themselves with the learning management system used in the course. The lecturer also provided information about how to access the course's Moodle page and offered contact details of technical support.

In terms of expectation scaffolds, the announcement entitled “Expectations and support” in the News forum represented the expectation scaffold in this

course. Such teaching practice clarifies expectations and diminishes uncertainty of what is expected from students and what to expect from lecturers (Boettcher & Conrad, 2010). In that document Lecturer 1 made it clear what lecturers expected from students and what students could expect from them. However, the lecturer did not ask what the students' expectations were and their learning needs in this course. Hawkins (2009) suggests that part of the high attrition rate among online students is due to students' expectations not being met or realised. In this study only one student (out of 21) dropped out at the start of the course, thus one can conclude that, in general, students' learning needs were met in this course.

Regarding resource scaffolds the course structure was characterised by presentation of the content through starters and announcements in forum discussions and news forums respectively, as well as via PowerPoint slides, Panopto presentations, and readings. Lecturers supported learners via group and individual feedback in shared and private spaces, synchronously and asynchronously. Analytical thinking was fostered through social and strategic scaffolding (these will be discussed in the following sections). Lecturers provided advice and counselling to students in private online spaces, by phone, Skype, e-mails, and some face-to-face meetings. Nonetheless, these aspects of scaffolding are not within the scope of this study.

Overall, students reported that all tasks (e.g., assignments, online participation requirements) were fully and clearly explained to them before the commencement of the course and that the lecturer provided a complete and clear structure of resources before the start of the semester. In relation to feedback, the majority of students considered that the lecturer provided formative feedback on students' postings and timely feedback throughout the course. Although one should keep in mind that some students felt that their questions in the Q&A section were not answered promptly.

The theory of transactional distance asserts that students with a greater degree of autonomy would be more comfortable with courses with less dialogue. Such courses would be characterised by highly structured resources (i.e., high transactional distance) and would require students to find information and make decisions for themselves on what to study, when, where, in what ways and to what extent (Moore, 2013). In contrast, students who are less autonomous in their learning would prefer courses with low structure and high dialogue (i.e., low

transactional distance). In these low structure courses, students would receive information and guidance through continuous dialogue with their lecturers and via educational resources that permit changes to suit their individual needs, learning style and pace (Moore, 2013).

Considering that half of the students in my study were novice online learners (seven students had never experienced a fully online course before), it can be suggested that they were in the transactional distance space (although temporally) and required ongoing dialogue with lecturers and students, as well as a flexible course structure. According to Falloon (2011), Moore's theory suggests a workable equilibrium

between learner autonomy and course structure, so that learners maintain a sense of empowerment and ownership of the learning (content and process), while at the same time working within a structure that provides adequate direction and communicates clearly standards and expectations of performance. (p. 206)

In this study procedural scaffolding encompassed orientation, expectation and resource scaffolds. Considering that a learner-focused process is being created and facilitated, it would be helpful if lecturers' expectations could have a more direct relationship with students' expectations (i.e., learners' needs) (Palloff & Pratt, 2007). The following part of this section will address other types of scaffold that are paramount for healthy online communities.

5.1.4.2 Social scaffolding

In the online classroom, in order to create a community, it is important to make room for the personal, the mundane, or the everyday life (Palloff & Pratt, 2007). Some students who underperform in online courses attribute such results to the impossibility of seeing their lecturers and peers, hearing their voices and ideas, or being actively involved in a F2F conversation; in other words they describe that they miss the human contact (Palloff & Pratt, 2007). Issues of connectedness, coalescence, sense of community, social presence, shared responsibility, and online identity all need to have a place in online teaching and learning in order to humanise distance education and promote healthy communities of practice.

Garrison and Akyol (2013) stress that the concept of social presence is crucial for collaboration and critical discourse. Garrison (2009) conceptualised social presence as the capacity of individuals to identify with the other participants or course of study, communicate purposefully in a safe space, and build interpersonal relationships gradually through reflecting their own personalities. Lecturers' and students' social presence can help students feel less isolated and lonely, encourages them to engage in the learning process, and brings students together in a virtual community (Lehman & Conceição, 2010).

Lecturers' modelling is important to describe appropriate communication (Garrison & Akyol, 2013) and interaction (Stavredes, 2010) to students. Modelling effective communication strategies using disciplinary knowledge and language was a social scaffold mentioned by the lecturer. Modelling effective communication encompasses the way a lecturer composes a posting, exhibits a line of thought, and is responsive to students' contributions. Evidence from the end-of-course survey indicated that over 80% of students perceived the lecturer frequently exhibited thinking-aloud modelling.

Students must see lecturers consistently applying the same standards of critical analysis to their own ideas as they expect students to apply to theirs (Brookfield & Preskill, 2005). In my study the lecturer modelled critical thinking while encouraging peer feedback. In addition, the lecturer expected learners to think and speak clearly and with academic rigor. Perhaps such modelling has contributed towards the improvement of students' postings over time: From long and vague contributions to concise or long postings but replenished of critical thinking.

A number of studies suggest that expression of self-identity through introductions is essential for building relationships and creating social presence in online learning communities (Gunawardena, 2014; Sung & Mayer, 2012). In the 'introductions' area, lecturers introduce themselves, share their likes and dislikes, hobbies, beliefs, and work and family characteristics. In this way they encourage students to introduce themselves and stimulate empathy for the others in the course (Bonk & Khoo, 2014). In my study the fact the lecturer did not introduce himself in the introduction area and that more than half of the students (54.5%) believed that the lecturer only sometimes shared personal stories and opinions represented a missed teaching-learning opportunity (Cowie & Khoo, 2014).

Sharing beliefs, values, motivation, as well as work and professional interests increases social presence over time (Sung & Mayer, 2012). Furthermore, sharing aspects of personal life is also an indicator of a visible social element in virtual groups and reflects participants' status as individuals beyond their lecturer or student profile (Perez-Mateo & Guitert, 2012).

Collison et al. (2000) emphasise that positive tone can embrace and respect learners' thinking and promote a culture of safety for risk taking. These authors propose a variety of tones, such as nurturing, humorous, imaginative, neutral, curious, analytical, informal, and whimsical, which may be used to engage learners' interests and stimulate their imaginations. Affective communication through the use of emoticons, capitalisation or punctuation, self-disclosure, and display of humour are indicators of the interpersonal communication feature of social presence (Garrison & Akyol, 2013). In my study lecturer's display of personality through tone, graphics and humour was also a social scaffold perceived to occur sometimes by six students and all the time by three students.

The informal tone in online discussions allows students to engage more fluidly in a dialogue with the others (Sung & Mayer, 2012). Casual or colloquial tone characterises a social element in which expressions or nuances of language are used in order to give a relaxed or intimate character to the communication (Perez-Mateo & Guitert, 2012). Both lecturer and students often used personal names and/or a more informal tone of communication during the course. The use of personal names shows that both lecturer and students acknowledge the identities of the individuals that form the online community. Addressing students by name is also a technique used to promote their social presence (Sung & Mayer, 2012). This awakening of the learner's identity may elicit greater participation and interaction in online classrooms over time (Sung & Mayer, 2012). In my study there was a growth pattern of students' names in the lecturer's postings, which doubled in the second online discussion. In contrast, the number of students' postings with this social scaffold decreased from a total of 61 in the first online discussion to 51 postings in the second online discussion. Given that I sampled online discussions only twice during the semester it is challenging to address this particular drop in students' postings. A potential reason for the decrease of

students' postings could be that students were too close to an assignment deadline and could not post more.

Livingstone (2001) conceptualises informal learning as “any activity involving the pursuit of understanding, knowledge or skill which occurs without the presence of externally imposed curricular criteria” (p. 4). Indeed, Hague and Logan (2009) argue that there is research evidence indicating that informal learning can support individual happiness and well-being as well as social cohesion and inclusion. In my study in the end-of-course survey, students reported that setting up an online Cafe and Can Anyone Help areas for fostering informal learning and peer support would have helped them to succeed in this online course. It seems that the setting up of informal learning areas could also have reduced the number of questions directed to lecturers in private spaces of lecturer-student communication.

In this research sharing insights and personal or professional experiences about the topic under consideration was frequently observed in the online discussions. Students developed their understanding collectively based on their educational leadership practices in their workplaces, which made online discussions very inviting and interesting. Such exchanges of praxis boosted dialogue among participants and created a social network from which students drew insights for their learning process and for further application in their professional contexts. As Palloff and Pratt (2005) assert, “the likelihood of successful achievement of learning objectives and achieving course competencies increases through collaborative engagement” (p. 8). In addition, as an online professional social network, the access to a range of educators, school stories and perspectives offers the kinds of relevant information that can underpin and extend dialogues in educational institutions (Melhuish, 2013). Learners bring a diverse and extremely valuable array of experiences to the online classroom, in which the sharing of these experiences stimulates meaningful connections among individuals and makes learning relevant (Pacansky-Brock, 2014).

Synchronous tools promote a myriad of opportunities for learners to receive instantaneous feedback, both in scheduled events and just-in-time interactions with lecturers (Finkelstein, 2006). In this study the use of interactive technologies for teaching, such as phone and Skype, enabled more immediate means to connect lecturers with students through real-time voice communication.

The lecturer sometimes phoned students to support their engagement with the course as well as foster personal contact with students. According to Conrad and Donaldson (2012), such one-to-one interaction is paramount for establishing an atmosphere of encouragement and open communication, and at the same time it helps to create a clear sense of teaching presence. In addition, the use of phone in this course as a synchronous communication mode used for clarification of assessment requirements and criteria corroborated Falloon's (2011) findings about the value of synchronous modes for logistical communication. In his study graduate students valued the opportunity of direct interaction with the lecturer via Adobe Connect virtual classroom for clarification of assessment requirements and discussion of readings.

The sharing of text, accounts, drawings, videos, and photographs, among students represents willingness to collaborate in the dialogue towards inquiry. In my study the majority of students reported to have shared new resources or recent news in online discussions. Nevertheless, approximately half of students indicated to have never created illustrations related to the content, whereas 36.4% of students stated to have shared original resources with peers sometimes. Sharing visual resources not only supports a range of learning styles but also contributes towards the strengthening of the online professional social network.

In this study the only protocol for participating in online discussions was a short explanation in the course's outline about the nature and extent of student participation. Students were expected to contribute three times a week and would be graded 15% of the total mark. Gilbert and Dabbagh's (2005) case study found three elements of structuring online discussions that significantly influenced meaningful discourse in students' postings: (a) facilitator guidelines, (b) evaluation rubrics, and (c) posting protocol items. Indeed, protocols emphasise participation, equilibrating the attention to individual learning with attention to group learning, as it encourages multiple modes of participation as well as fosters trust in the educational transaction (McDonald, Zydney, Dichter, & McDonald, 2012). Students confirmed that providing online participation protocols and offering peer facilitation guidelines were important instructional support strategies for helping them to successfully achieve in an online course.

When looking at social scaffolding in this course using the lens of the TDT, it is possible to see some factors that may have impacted on dialogue and

the relation between dialogue and structure. Moore (1993, 1997) postulated that the extent and nature of dialogue is determined by a series of factors, including the educational philosophy of the course. The fact that students shared insights and personal or professional experiences may be related with the lecturer's reinforcement of one value present in the course's philosophy: The creation of new understandings and ways-of-being that critically explore the experiential and contextual nature of educational leadership locally and internationally (University of Waikato, course philosophy, 2012). Another element that influences dialogue is the personality of the lecturer. In this course the lecturer appeared to be friendly, respectful, and displayed a casual tone, which may have contributed towards the fluid and friendly atmosphere characteristic of the online discussions.

Furthermore, Moore's theory calls attention to the relationship between dialogue and structure such that high dialogue is likely to occur in low structure online learning environments. In this study the absence of some structural elements may have limited online dialogue to achieve its fullest potential. Structural elements, such as online participation and peer facilitation guidelines, could have boosted individual and collaborative learning through meaningful discourse (Gilbert & Dabbagh, 2005). However, it is important to be aware that too much structure or constraining protocol items, for instance specifying the length of a posting and stipulating reading citations (Gilbert & Dabbagh, 2005), may lead towards a decrease in dialogue. Therefore it was a fine balance regarding the elements that compounded the online participation explanation for students in this course, which could have been enhanced by the addition of clear expectations of performance in online discussions (i.e., online participation protocols and peer facilitation guidelines).

Social scaffolding is a fundamental teaching strategy in online courses, which emphasises human contact and social presence in order to promote healthy communities of practice. Modelling using disciplinary knowledge and language, the use of personal names and/or a more informal tone of communication, and sharing personal or professional experiences were social scaffolds enacted in this course. In addition, the findings point to the importance of online identity in interpersonal communication as well as setting up areas for informal learning and peer support. The next section will explore two forms of strategic scaffolding practised by the lecturer in this online course.

5.1.4.3 Strategic scaffolding

The adoption of strategic scaffolds requires lecturers to closely observe individual learner performance in order to provide support when needed (Stavredes, 2011). In online courses this just-in-time approach demands frequent dialogue (Stavredes & Herder, 2013). Each participant in a dialogue is a respectful and active listener who builds on the contribution of the other and thus creates a synergistic relationship (Moore, 1993, 2013). For Moore the importance of dialogue does not depend on the frequency but on the quality and the extent to which it efficiently mediates the resolution of learning problems that the student may encounter (Falloon, 2011).

In this study dialogic interactions were characterised by openness, collaboration, collective knowledge building and sense of agency. The graduate students appeared to be committed to learning as a joint inquiry through a dynamic of permanent discovery. This is likely to have happened in relation to novice online learners who were learning how to navigate in the online course and express themselves using a text-based communication medium. Moore and Kearsley (2012) contend that the medium of communication is one of the most important environmental variables in the educational transaction. For these authors, asynchronous online discussions may lead to a highly structured dialogue because it is in writing, whereas discussions by telephone or Skype usually afford a highly dialogic process.

According to the TDT, the discipline taught and academic level influence dialogue between teachers and students (Moore, 1993, 2013). Moore (1993) pointed out that the extent of dialogue among educators and students in particular disciplines and at some academic levels is higher than in others. According to the author, teaching online courses at the graduate level in social sciences and education provides opportunities for strongly inductive, Socratic teaching approaches with small groups or individual project work. In contrast, online courses in science and mathematics generally demand a more teacher-centred approach with much less dialogue (Moore, 1993). The findings of my study support this view as, in this study, online teaching and learning in educational leadership at the graduate level presented high levels of dialogue in online discussions. In addition, some external factors affected participants' ability to engage in dialogue. For example, one student said that she had to go to her school

during the weekends, as her rural Internet connection could not cope with downloading Panopto presentations. The same external factor (access to and quality of broadband) was observed in Falloon's (2011) study of the virtual classroom, in which he emphasises that such factors should not be taken for granted when making decisions about selecting digital technologies for educational transactions. Another external factor that impacted on learner engagement in dialogue was the unsuccessful attempt of grouping students. Efforts were made towards the middle of the course to divide students into smaller groups. However, this was not possible due to the insufficient technical support. During the grouping trial, some students could not access and participate in online discussions.

In the dialogic interactions of this study, the lecturer enacted two forms of strategic scaffolding: Acting as a facilitator of discussion and steering students' thinking.

According to Brookfield and Preskill (2005), a skillful lecturer uses both knowledge and voice to foster students' participation and understanding. These authors describe skillfulness as working tirelessly to stimulate students to talk to each other. To achieve this lecturers need to be active members of the community, permanently on the lookout for new links, understandings, and constructions of the familiar and the unknown (Brookfield & Preskill, 2005). Despite the fact that lecturers in my study were experts in the subject matter, they did not see themselves as the repositories of knowledge, rather, they saw students as critical co-investigators in dialogue with them. This view resonates with that of Freire (1986); for instance, lecturers offered a small list of readings to students and invited students to bring other resources to encourage their self-expression and sharing of their own perspectives on those resources.

Brookfield and Preskill (2005) argue that if the aim of education is facilitating students' efforts to learn and understand, respecting their ideas and points-of-view by keeping silent is one of the discussion leader's greatest virtues. In this study the lecturer was an active member of the online community while leaving space for students to develop their own ideas and collaboratively make meaning. The lecturer mentioned that at times he was reading and reflecting on postings without answering them back to foster learner autonomy. This attitude was communicated to students at the start of the course and in some postings.

Instructional support strategies frequently used by the lecturer to facilitate learning in this online course consisted of: Using questioning to create momentum in discussion, increasing the focus on a topic or a task, and acknowledging students' ideas.

The lecturer in my study was an expert in educational leadership and was able to facilitate meaningful learning experiences to students via applying the course content to current and innovative situations. In the same way, the lecturer used small narratives of particular events from his professional experiences to inspire learners to engage with the content and further understand innovative professional experiences. Such strategic scaffold may address opportunities of questioning that have lingered unnoticed or unexplored (Collison et al., 2000).

Collison et al. (2000) argued that one of the core responsibilities of an online educator is to keep clarity of the discussion' direction and continuously sharpen its focus, in other words, keeping the intellectual content of the dialogue moving forward. For these authors the goal of the online facilitator is to clarify and extend the thinking of other people. In my study the lecturer increased the focus on the topic or task by asking questions, as well as leaving a sentence for prompting reflection at the end of a posting.

In this study the lecturer acknowledged students' background knowledge and professional experiences. By doing so the lecturer made each student feel recognised and included (Bender, 2012). Such strategic scaffold also prompts a sense of being closely listened to, while receiving supportive feedback (Bender, 2012). Moreover, praising students' contributions and efforts may have boosted their confidence in online engagement (Salmon, 2011).

According to Stavredes (2011), providing different angles to discussion about a particular subject matter may help students develop critical thinking. The results of this study show that students had mixed perceptions regarding the frequency of the lecturer's actions towards being a guide, identifying areas of agreement and disagreement, recognising misconceptions and summing up content in online discussions. Gathering multiple perspectives on the subject matter and offering a weaving of ideas based on students' postings while displaying ambivalence and suspension of judgment could support learners to build meaning from their discussions (Collison et al., 2000). In this sense identifying areas of agreement and disagreement is a strategic scaffold to point out

commonalities and differences of perspectives among students, while fostering analytical thinking. According to Boettcher and Conrad (2010), part of the teaching and learning process consists of identifying areas of dissonance and inconsistency in course content, other resources and learners' own beliefs. Therefore when either lecturers or students identify misconceptions in online postings, it helps students deepen their comprehension of the content and sharpen their critical thinking.

While some students felt that the lecturer had not provided guidance, identified areas of agreement and disagreement, recognised misconceptions, and summed up content, others indicated that the lecturer challenged and compared their ideas. By challenging students' inferences and assumptions, teachers stimulate learners to build strong arguments based on verifiable evidence (Stavredes, 2011). In this view students' line of reasoning can be extended beyond immediate implications, considering secondary and tertiary implications for the present and the future of people, places, or things (Stavredes, 2011). Furthermore, the lecturer also compared students' ideas. Comparing students' ideas stimulates them to be aware of the array of interpretations that are possible about a specific topic. It can also function as an eye-opener to students and help them understand that the topics of study are complex and that comprehension of them depends on constant further research and reflection (Brookfield & Preskill, 2005). Furthermore, this strategic scaffold created an opportunity for all voices to be considered in the discussion, refusing predetermined conclusions or preselected meanings (Brookfield & Preskill, 2005).

This section has discussed the nature of dialogic interactions in the course according to the TDT, describing environmental variables along with internal and external factors that influenced dialogue. Specially, two forms of strategic scaffolding were discussed through a description of five scaffolds that were perceived by students during the course (i.e., using questioning to create momentum in discussions; increasing the focus on a topic or task; and acknowledging, challenging, and comparing students' ideas). The following section will explore students' perceptions and actions of peer scaffolding throughout the course.

5.1.4.4 Peer scaffolding

Peer learning is a two-way mutually beneficial relationship in which students share knowledge, ideas, and experiences with one another (Boud, 2001). Students learn from and with each other by articulating their thinking to peers and taking part in collaborative tasks. According to Boud (2001), students develop skills in systematising and designing learning tasks, working cooperatively with peers, giving and receiving feedback, and self-assessing themselves. However, some researchers refute peer learning claiming that students are not capable of mediating learning of peers as they are “usually partial holders of knowledge” (Riazi & Rezaii, 2011, p. 60).

Regardless, according to Boud (2001), peer learning provides students with suitable conditions for practising taking responsibility for their own learning as well as learning how to learn. Although current peer learning practices are frequently presented in an ad hoc and unsystematic manner, which may generate confusion among students who do not understand what they are supposed to do (Boud, 2001), peer guidelines could be developed to inform students on how peer learning fits with the course, its purpose, the form of peer learning to be used and how students would work together (Cohen & Sampson, 2001).

In a study about peer scaffolding of metacognition (Pifarre & Cobos, 2010), instructors and learners collaborated to develop guidelines for working together and supporting peer review. These peer scaffolding guidelines referred to the following five features: Content adequacy, personal elaboration and organisation of ideas, presentation strategies, and conclusions. According to these authors, these guidelines functioned as a script that guided and structured the composing of students’ scaffolds used to help peers to enhance their texts. This was also the case in Gilbert and Dabbagh’s (2005) study which showed that guidelines supported the facilitation and evaluation of student postings and raised the cognitive quality and quantity of such postings, fostering a more meaningful understanding of course content.

In the present study, one of the main course objectives mentioned by the lecturer in the start-of-semester interview was encouraging students to facilitate each other’s learning. This aim was confirmed in the end-of-course survey in which more than 80% of students reported that the lecturer encouraged constructive peer feedback throughout the course. Although peer facilitation was

one of the main objectives of the course, the lecturer had not provided students with peer facilitation guidelines, nor modelled how to facilitate online discussions purposefully to teach students how to scaffold each other's learning. Moreover, the lecturer did not assign any student with the responsibility of facilitating a specific period of time with a particular content.

The analysis of students' postings showed three kinds of peer scaffolds most often used by them during the course: Agreement with others' ideas, acknowledgement of peers' postings and answering questions raised by peers.

Agreement with others' ideas was the peer scaffold most frequently used by students in my study. It has been suggested that such action may reflect individuals taking responsibility for constructing meanings through confirming valid knowledge (Garrison, 1997). Palloff and Pratt (2007) allude that it is not unusual to observe students saying, "good job" or "I agree with you" as their initial efforts at providing feedback in online discussions. Stavredes (2011) emphasises the need of online courses to have a discipline in discussions to ensure that the result of the discussion is students changing their thinking and adding to their knowledge. Without a disciplined discussion, peer interactions can be shallow, which does not contribute towards the collaborative knowledge building process (Stavredes, 2011). In my study there was not a thorough protocol about online participation, which potentially may have influenced the way in which students interacted with one another. Even though there were some instances in which students simply agreed with peers' ideas without elaborating on those ideas, there were examples of students who agreed with others' ideas and presented arguments to validate their opinion.

Acknowledgment of peers' postings was the second most frequent peer scaffold in students' postings. Students foster an open environment by acknowledging the contributions made by others, including the contrasting perspectives, which also encourage students to contribute (Hew & Cheung, 2012). Nevertheless, peer feedback that is entirely characterised by compliments does not offer the recipient many options for revision, but they are frequently perceived very positively (Van der Pol, Van den Berg, Admiraal, & Simons, 2008). Such messages also support the creation of a conducive atmosphere for students to discover inconsistencies and negotiate differing perspectives (Hew & Cheung, 2012). In my study students reported to have acknowledged peers' contributions

in their postings. Though there were some students' postings that simply acknowledged peers' ideas, the majority of students' contributions extended on these ideas, sharing similar or alternative professional experiences or personal insights.

Answering questions raised by peers was the third most common strategy in online discussions. According to Rourke and T. Anderson (2002), the additional perspectives offered by peers via opinion, personal experience, and analogy add to their comprehension of the content, making it more concrete and helping them realise higher-order objectives. Lim (2010), and Rourke and T. Anderson (2002) showed that sharing multiple perspectives among peers motivated students to contribute to discussions and that students learnt from peer's contributions in online discussions. In my study students indicated to have responded to at least one peer contribution in their online postings. The responsiveness of students towards their peers was characterised by students voicing their viewpoints, brainstorming their ideas, and also challenging each other's thinking by asking questions.

The analysis of online discussions and students' data from the end-of-course survey on self-perception of practices of peer scaffolding indicated two patterns of peer-facilitation that occurred in this online course. In the first part of the course students summed up the content, agreed with peers' ideas, acknowledged their contributions, and used initiating questions to stimulate dialogue. This pattern has diminished over time giving place to instances of disagreement, question and response dynamics, and development of self-reflection. Such patterns may have happened due to the development and strengthening of interpersonal relationships over time as well as evolving skillfulness in online engagement.

Although disagreement with others' ideas was the subtype of peer scaffolding less used by students in my study, such strategy is a productive outcome of a discussion, especially if differences of perspectives are clearly explained (Brookfield and Preskill, 2005). An exposition of different viewpoints can encourage additional thinking and discussion by opening up an opportunity for students to elaborate on one's own view in relation to another's (Brookfield and Preskill, 2005). Perhaps the small number of students' postings that displayed disagreement in my study reflects the perceived risk of damaging the friendly

atmosphere of online discussions and move dialogue away from inquiry by defending personal positions, which could also be perceived by fellow students as closure or threatening (Collison et al., 2000). Another reason why disagreement with others ideas was the less frequent peer scaffold could also reside in the fact that the lecturer appeared to have not modelled often the identification of areas of agreement and disagreement in online discussions.

Overall, my study corroborates Correia and Baran (2009) reasoning in which facilitation is a shared responsibility among lecturers and students, changing the traditional view of education as transmission of knowledge from lecturers to students towards a more collaborative inquiry process. According to Steinman (2007), in hierarchical relationships between lecturers and students, transactional distance increases. On the other hand, interactive communication among lecturers and students decreases transactional distance (Steinman, 2007). Indeed, Kuskis (2006) concluded that dialogue between lecturers and students, and among students reduces transactional distance. In my study, it appears that students exercised learner autonomy through intellectual independency and interdependence with the online community. Students would have been more autonomous if they were able to negotiate learning outcomes, course goals (e.g., topics) and the assessment decisions with lecturers.

Although the theory of transactional distance was very helpful in analysing the main elements that constitute a successful online learning experience, it was challenging to analyse strategic and peer scaffolding using this lens. Moore (1993, 1997, 2013) does not address online scaffolding enacted by instructors in environments characterised by high and low levels of structure and dialogue. Furthermore, Moore's theory does not substantially delve into peer learning and peer feedback, which frequently occurred in this study. It would be helpful if further studies could explore in-depth, in practical and philosophical terms, what would constitute facilitation strategies (from instructors and students) in an online learning environment using the TDT.

In summary, this section provided an analysis of the scaffolding actions enacted by a lecturer and students who brought to light a unique set of strategies for facilitating learner engagement in a fully online course. In particular, procedural scaffolding, social scaffolding and strategic scaffolding were support strategies enacted by the lecturer in this educational leadership course. Scaffolding

patterns that occurred over time were characterised by a high level of procedural and social scaffolding at the start of the course, followed by ongoing learner support, which peaked before assignment deadlines. Peer scaffolding was also practised by students, who used a variety of strategies to support each others' learning.

In this study several students' expectations were met; however, there were a few unmet learners' needs that may point to additional actions in future versions of this course. This online course addressed the following students' expectations: (a) the lecturer was frequently present; (b) used questioning to keep momentum in online discussions; (c) gave feedback; (d) acknowledged and challenged students' ideas, and (e) checked planning and drafts of assignments. On the other hand, some students' expectations were not met in this online course, including: Grouping students, provision of guidance, and summing up of the content in online discussions.

Importantly, this discussion demonstrated the multifaceted and complex nature of online teaching in tertiary education. The discussion revealed what online scaffolding meant for both lecturers and students and it offered an overview of what students expected and how their expectations were met in a fully online educational leadership course. The key value of this study lies in its exploration of scaffolding in distance education in a higher education setting. This study offers a valuable contribution on scaffolding in online environments, a field of knowledge which is still at an exploratory stage (West et al., 2013). This research also sheds light on lecturers' and students' perspectives on online scaffolding in an educational leadership course. In this account graduate students indicated which support strategies could enhance their learner engagement (e.g., grouping students, provision of guidance) and which factors functioned as barriers (e.g., slow feedback in the Q&A section) to their online learning experience. This research also acknowledged the value that peer scaffolding offers to student learning and the value of social scaffolding in bringing back collaboration and human contact to the online classrooms. Consistent with the findings from Lim (2010), sharing personal and professional experiences and the view that peers are both students and teachers who are capable of giving formative and timely feedback are among the key findings of this study.

Chapter 6: Conclusion

Each educational process begins with the analysis of a question, which evokes the creativity of the answers in a constant act of knowledge building (Freire & Faundez, 1985). However, the most important aspect of a research journey is to connect the question and the answer to the actions that were enacted, or to actions that will be practised or redone (Freire & Faundez, 1985). In my inquiry process, I answered the research questions using findings from lecturers' and students' perceptions, opinions and actions. The suggestions provided in this chapter have the potential to enhance teaching and learning experiences in the educational leadership context and possibly other disciplines as well.

The aim of this study was to explore how lecturers and students in a fully online educational leadership course scaffold learning over time. This case study looked at the perspectives of two lecturers about online scaffolding, and the experiences of one lecturer and 14 students enrolled in an educational leadership online graduate course during a period of thirteen weeks. Data from these participants were analysed to find out their perspectives on online scaffolding and the types of online scaffolding they enacted during the course. Results were discussed using the transactional distance theory and other literature on distance education.

The present chapter summarises the major findings and conclusions that can be drawn from this study. Furthermore, suggestions for enhancing online scaffolding and recommendations for future research are presented. This chapter concludes with a final reflection on this research.

6.1 Conclusions

The conclusions of this study address four areas: (a) lecturers' understanding of online scaffolding; (b) students' understanding of online scaffolding; (c) students' expectations regarding online scaffolding, and (d) multifarious nature of online scaffolding as seen through the lecturer's and students' actions during the course.

6.1.1 Lecturers' understanding of online scaffolding

In this educational leadership course, lecturers' views on online scaffolding can be categorised broadly into those that refer to procedural scaffolding and those that speak of strategic scaffolding. Lecturers' understanding of online scaffolding encompasses the design and use of resources for supporting students to become experts or better practitioners of educational leadership. Moreover, lecturers perceived online scaffolding as the act of questioning at the beginning of each forum discussion, thus facilitating learner engagement with content. Importantly, online scaffolding was perceived by lecturers as decreasing as the semester progressed. During the course adaptive scaffolds were used, peaking before assignments deadlines. What became evident from lecturers' data is that they deeply believed that graduate students were autonomous and needed to have time and space to exercise their self-regulation.

6.1.2 Students' understanding of online scaffolding

Online scaffolding is perceived by students as a coaching process (e.g., online scaffolding should offer motivational prompts, provoke reflection) in which lecturers monitor learners' performances in order to provide encouragement, identify misconceptions, offer direction and feedback when needed. Importantly, students also expected that lecturers would mentor them (e.g., through modelling, academic counselling, scholarly support) so that they could better develop personally and professionally. Indeed, procedural and strategic scaffolding were indicated as essential ways of learner support for these students. Moreover, students felt that formative and timely feedback was vital to their online scaffolding and that it should be presented throughout the course in a dialogic manner (Carless, 2013). In addition, students emphasised the importance of peer feedback; the students felt that their fellow students were in the similar zone of proximal development as they themselves, and believed that it could be bridged through sharing insights and resources thus bringing them to a deeper level of thinking which could not be achieved if attempted individually.

6.1.3 Students' expectations regarding online scaffolding

In this educational leadership course, students expected lecturers to provide procedural, social, and strategic scaffolding. In regard to procedural scaffolding, students expected that lecturers would set up and monitor communication spaces, and that there would be a gradual release of content materials throughout the course. In terms of social scaffolding, lecturers' online presence and grouping students were two strategies expected by students. Students also expected lecturers to be a guide, give formative and timely feedback, use questioning to keep momentum in online discussions, sum up content, acknowledge and challenge students' ideas, and check assessment drafts. In summary, students expected lecturers to guide their learning process through instructional design and online facilitation.

6.1.4 Multifarious online scaffolding

In the educational leadership online course in this study a variety of types of online scaffolding were observed. Procedural scaffolding was applied throughout the course, but mainly at the beginning of the course in the instructional design stage. Such preliminary planning culminated in a clear structure of resources and gradual releasing of the content materials. Moreover, during the course, lecturers offered formative and timely feedback on students' assignments.

The lecturer and students used different forms of social scaffolding. For example, setting up private areas for lecturer-student interaction created confidential spaces for open communication, where students had the possibility of having one-on-one interactions with the lecturer and sound off any personal issues or scholarly concerns. Lecturers also frequently used think-aloud modelling which might have had a positive effect on students' development of online postings characterised by critical thinking which was observed towards the end of the semester. Most important, it was the sharing of personal and professional experiences and visual resources that characterised social scaffolding in this course. Likewise, the course offered a friendly atmosphere, reflected in a more informal tone of communication and the use of students' and lecturers' names in online postings. Moreover, students felt that throughout the course they developed

interpersonal relationships with their peers and that there was a sense of community.

Strategic scaffolding was enacted by Lecturer 1 via acting as a facilitator of discussion, offering expert advice, and steering students' thinking. In this course the lecturer mainly acted as a facilitator of discussion by questioning, increasing focus on the topic at hand, and acknowledging students' ideas. Most importantly, the lecturer preferred to leave space for students to lead online discussions. In addition, the lecturer provided expert advice to students and steered their thinking through challenging and comparing their ideas. Negotiation of learning outcomes occurred occasionally, with a few students, and happened mostly during students' development of assignments.

Peer scaffolding was encouraged by the lecturer and practised by students in a variety of ways. Three major kinds of peer scaffolding were observed during the course: Agreement with others' ideas, acknowledgment of peers' postings, and answering questions raised by peers. Two patterns of peer facilitation were observed across the course: In the early part of the course, students summarised content, agreed with each other's ideas, acknowledged peers' contributions, and used initiating questions to trigger discussions. Such patterns decreased over time giving place to instances of disagreement, question-and-answer exchanges, and development of self-reflection. Perhaps as students strengthened their interpersonal relationships over time, they felt more comfortable to challenge and be challenged by their peers and were more open to share personal reflections with their online community.

6.2 Suggestions for enhancing online scaffolding

In this study students made a number of suggestions for enhancing online scaffolding in the course. These suggested support strategies could be transferable to any online course in higher education.

Students' suggestions included:

- Offering clear instructions about weekly tasks and learning objectives
- Providing a schedule with topics and respective times for studying and discussion
- Providing clear and precise guidelines for assignments

- Shortening discussion starters
- Providing a list of references for all readings and creating an open document for ongoing inclusion of references by students
- Introducing self-reflection in the assessment landscape
- Creating electronic assignment boxes

Based on these findings and the literature on distance education, the following suggestions can be made to enhance online scaffolding in this course:

6.2.1 Create a course road map

As a procedural scaffold, a road map can visually demonstrate the relationship between the learning outcomes and the course tasks (e.g., table), as well as support students in developing a plan for learning (Stavredes, 2011). Creating a course road map would highlight each module, including objectives, activities, and how they relate with the learning outcomes of the course; resources needed; estimated time to complete the tasks and due dates; posting spaces for assignments; and a link to the criteria used for marking the assignments (Stavredes, 2011).

6.2.2 Set up online office hours

If students encounter any difficulty or need to talk to the lecturer about any personal matter, it would be helpful to create online ‘office hours’ during which students could synchronously communicate with the lecturer. This suggestion resonates with Finkelstein (2006) view that lecturer accessibility reflects a sense of caring for students’ wellbeing which provides assurance and contributes to students’ motivation.

6.2.3 Describe the pace of the course

The findings of this study suggest that learners expect to know in advance the pace and schedule of the course. The information about how content units will be encountered over the course of the semester (e.g., self-paced, weekly units with due dates, etc.) may substantially contribute towards student persistence (Stavredes, 2011). Moreover, describing the time needed to complete weekly

tasks, the number of hours students might spend in the course per unit/per week may help them to allocate enough time to meet all the course's requirements (Stavredes, 2011).

6.2.4 Discussion starters

Mini-lectures or weekly progressive releasing of chunks of information provided by lecturers could assist students on entering the discussion earlier. For instance, questions released over the week helps students to keep momentum in the conversation and avoid large one-off contributions by one student who addresses all questions at once and thus may discourage others to contribute (Boettcher & Conrad, 2010).

6.2.5 Fostering connectedness

At the beginning of the course, in the 'Class Member Introductions' section, it is highly desirable for lecturers to describe themselves to students (Bonk & Khoo, 2014). This simple action may not only model online engagement but also create a personal relationship with students. In this way students would have a better understanding of who the lecturer(s) is (are). Such personal introduction could include the lecturer's daily routine, family, background, hobbies, passions, and worries. This action may potentially foster among students a feeling of empathy and a sense of connectedness.

6.2.6 Fortify the structure of the course

In this study a high number of questions in the Q&A or Personal reflection space/feedback areas may be signalling the need for a major restructuring in the course layout on Moodle. If students have all the information that they need on the course webpage, the number of questions relating to 'course logistics' addressed to lecturers during the course might decrease considerably. One potential strategy would be to take past and frequent students' questions and include them, together with the answers, in the Q&A section. Another strategy could be to create spaces for peer feedback (e.g., Can anyone help?) and for informal conversations (e.g., Online café) (Cowie & Khoo, 2014).

6.2.7 Create participation guidelines

Clear rules and guidelines are needed to facilitate and enhance students' active participation in online tasks (Gedera, 2014). Such guidelines may offer instructions on how to communicate effectively and politely online (Boettcher & Conrad, 2010). Many students came, and this may be the case in the future as well, to this online course without previous online learning experience and therefore they need guidance to have a positive educational experience. Clear rules and guidelines may help to decrease the number of interventions (by phone or personal e-mails) that lecturers need to make during the period of the course.

6.2.8 Create peer facilitation guidelines

Other ways to ensure students' active participation is to share the responsibility of facilitation with them (Palloff & Pratt, 2007). Generally, this is realised by assigning students the responsibility of facilitating online discussion for one week during the course (Palloff & Pratt, 2007). An essential part of this process would be to provide peer facilitation guidelines to help students to be online facilitators and foster collaborative learning through meaningful discourse (Gilbert & Dabbagh, 2005).

6.3 Limitations of this study

There were a number of limitations in this study. The sample size (14 students in discussion forums and nine students who completed both surveys) precluded statistical analyses beyond descriptive statistics. The sampling of only two weeks of forum discussions constrained the analyses of the gradual or abrupt development of online scaffolding — it would be necessary to collect data (e.g., on online discussions) from all weeks, or at least every other week, in order to comment on the evolution of online scaffolding in both lecturers and students. Moreover, given that the analysis of some online spaces used by lecturers and students (i.e., personal reflection space and personal feedback space) were out of the scope of this study these potential data could not contribute to more extensive and in-depth understanding of online scaffolding that occurred in all communication mediums used in this course. Such limitation, combined with the

absence of analysis of students' assignments, constrained any inference of negotiation of learning outcomes between lecturers and students during the development of assignments. Furthermore, the impossibility of triangulating data from Lecturer 2 also posed another limitation of this study. In addition, although the transactional distance theory (TDT) provided important elements for the analysis, it failed to address online facilitation strategies and peer scaffolding in tertiary education, thus limiting the interpretation of these themes from the TDT perspective.

6.4 Recommendations for future research

Recent literature suggests that the use of social network analysis could contribute to further understanding online interactions and participation patterns in online courses (Wise, Zhao, Hausknecht, & Chiu, 2014). Social network analysis explores, using mathematics and visualisation, patterns formed by interacting individuals in order to explore their effects on the members of the network (Scott, 2012). The present study could be extended using social network analysis to explore online scaffolding in tertiary educational settings, which could potentially yield further understanding on online interactions and participation patterns related with scaffolding.

Next-step studies could implement the same research design as this study but introducing online participation and peer facilitation protocols in the online course. Such educational intervention could possibly lead to higher levels of knowledge building among students in discussion forums.

It would be worthwhile to develop a model of facilitation strategies in online tertiary education settings using the TDT. Such study could explore which facilitation strategies would characterise high and low transactional distance in online learning environments (OLEs). The same reasoning could be used to extend knowledge about peer facilitation in distance education.

Future studies could analyse all weeks or every other week of discussions in an online course in order to map scaffolding over time. In addition, such investigation could test earlier conceptualisations of scaffolding in which the teacher, or more experienced peer, guides learners towards the completion of a task, gradually decreasing the intervention towards a total or partial fade of scaffolding. Would a total fade of scaffolding occur in an OLE?

In summary, this study recorded how online teaching unfolded in an educational leadership course, analysing the weaving of course structure, dialogue and learner autonomy. Moore's theory enabled the identification of strengths and weaknesses of course design and teaching practices which signalled potential enhancements for this and other online courses.

As a result, this study contributes to better understanding of a variety of teaching strategies used to facilitate online learning in an educational leadership course and it contributes towards the development of distance education, and more specifically, online pedagogy. This study provided a detailed account of four types of online scaffolding based on lecturers' and students' perspectives and actions. Lecturers and students offered meaningful insights to guide tertiary education staff in how to scaffold learning in a complex and ever changing world of online education. The study showed how important social scaffolding is for a healthy online community which respects and values each participants' contribution. It also demonstrated the richness of peer scaffolding, in which students become teachers to one another, strengthening online discussions through a range of facilitation strategies. This study showed the importance of procedural scaffolding and the way that it can make the online learning environment inviting and easy for the learner to engage with. Modelling, coaching and mentoring were teaching practices highly valued and expected by students.

Students also expected the lecturers to provide online participation and peer facilitation guidelines. By exploring both lecturers' and students' actions, this study offers a reflection on how lecturers and students work together in an online learning environment in order to develop personally and professionally. It also revealed how meaningful lecturers' and students' perspectives, expectations and actions in relation to online scaffolding can be. How would they be in your educational context?

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Appendix A: Start-of-semester lecturer interview

1. Tell me about your approach/es to online teaching.
2. What, in your view, is online scaffolding?
3. What kinds of support do you provide to students during online discussions?
4. When you use Moodle, how do you use it?
5. How would you describe your participation in asynchronous online discussion forums?
6. What do you see as advantages for teaching in asynchronous virtual learning environments?
7. What do you see as limitations for teaching in asynchronous virtual learning environments?
8. What do you see as possibilities for learning in asynchronous virtual learning environments?
9. What do you see as limitations for learning in asynchronous virtual learning environments?

Appendix B: Start-of-course student online survey

[]1. Have you ever participated in a fully online course? *

Please choose all that apply:

- I have never done a fully online course
- I have done a hybrid course(s) (online course with face-to-face lectures)
- I have done several fully online courses
- I have participated in a massive open online course(s)-MOOC(s)
- I have participated in an online study skills course (e.g., foundational studies for future tertiary training)
- N/A

Please tick all that apply

[]2. What kinds of online support have you experienced in online courses you took in the past? *

Only answer this question if the following conditions are met:

Answer was at question '1 [1]' (1. Have you ever participated in a fully online course?)

Please choose all that apply:

- Help with how to participate in the course environment and learning activities
- Help with planning, monitoring, and evaluating my learning and reflective processes
- Help with what to focus on (e.g., definitions, study guides)
- Help towards strategic learning pathways (e.g., probing questions, expert advice)
- N/A
- Other:

[]3. In your previous online courses, how often did you do the following? *

Only answer this question if the following conditions are met:

Answer was at question '1 [1]' (1. Have you ever participated in a fully online course?)

Please choose the appropriate response for each item:

| | Never (0%) | Rarely (10%) | Sometimes (50%) | Frequently (70%) | All the time (100%) | N/A |
|--|-----------------------|-----------------------|-----------------------|-----------------------|---------------------------|-----------------------|
| I posted my reviews of the readings required by the lecturer | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I shared new resources and recent news | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I asked for clarification about peer postings | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| When I disagreed with my peers' ideas, I explained my own perspective | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I discussed the readings using real-world examples | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| When posting about alternative perspectives, I explained new concepts | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| For my postings, I created illustrations related to the content (e.g., diagrams, concept maps) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| In my postings, I responded to at least one peer posting | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

[]Other:

Only answer this question if the following conditions are met:

Answer was at question '1 [1]' (1. Have you ever participated in a fully online course?)

Please write your answer(s) here:

[]4. In your opinion, what kind of online support should teachers provide in a fully online course?

Please write your answer here:

Please give an example (when, where, how and why)

[]5. Online forum discussions support effective learning because: *

Please choose the appropriate response for each item:

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree | N/A |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| No one is left out or silenced | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Class time is extended | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Written communication can be carefully thought through and elaborated on | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Reflection and depth of learning are promoted | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

[]Other:

Please write your answer here:

[]6. In your experience, in discussion forums, to what extent do lecturers *actually do* the following? *

Please choose the appropriate response for each item:

| | Never (0%) | Rarely (10%) | Sometimes (50%) | Frequently (70%) | All the time (100%) |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Compare students' ideas | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Negotiate learning outcomes with students | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Increase focus on topic/task | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Exhibit think-aloud modelling | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Display their own personality with tone, graphics, and humour | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

[]7. In online discussions, to what extent do you expect a lecturer to: *

Please choose the appropriate response for each item:

| | Never (0%) | Rarely (10%) | Sometimes (50%) | Frequently (70%) | All the time (100%) |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Be present | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Use questioning to create momentum in discussion | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Challenge your ideas | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Acknowledge your ideas | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Give feedback | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Share personal stories and opinions | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Sum up content | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Be a guide | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

[]Other:

Please write your answer(s) here:

| |
|--|
| |
| |

[]8. In online discussions, to what extent do you expect fellow students (your peers) to: *

Please choose the appropriate response for each item:

| | Never (0%) | Rarely (10%) | Sometimes (50%) | Frequently (70%) | All the time (100%) |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Actively participate | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Make relevant postings | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Acknowledge and respond to other students' contributions and inquiries | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Develop interpersonal relationships | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Foster a sense of community | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Leave space for others' contributions | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Make connections with what has been said previously | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Use readings effectively by commenting on readings instead of directly quoting authors | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

[]Other:

Please write your answer(s) here:

| |
|--|
| |
| |

[]9. Which ethnic group do you belong to? *

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

- NZ European
- Maori
- Asian
- Pacific peoples
- Middle Eastern
- African
- Latin American
- N/A
- Other

Mark the space which apply to you

[]10. What is your gender? *

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

- Female
- Male
- N/A

[]11. What is your age? *

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

- 18-24 years old
- 25-34 years old
- 35-44 years old
- 45-54 years old
- 55 years or older
- N/A

[]12. How long have you been teaching? *

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

- Less than 5 years
- 5 – 10 years
- More than 10 years
- N/A

[]13. What year levels do you teach (or have taught in the past)? *

Please choose **all** that apply:

- I have never taught
- Early childhood education
- Years 1–8
- Years 9–13
- Tertiary education
- N/A

Tick all that apply

[]14. Student ID number

Please write your answer here:

Appendix C: Categorisation scheme for online scaffolding

| | |
|---|--|
| SOCIAL SCAFFOLDING | Strategies for constructing a safe environment for collective and individual learning. For instance, spaces for social interaction, informal discussions and technologies that humanise online teaching. |
| Modelling effective online communication strategies | Everything that is asked of students to do needs to be directly modelled by the lecturer (i.e., lecturer' postings reflect online participation guidelines). |
| Setting up an online "Café" and "Can Anyone Help" areas | These spaces enable informal discussion and offer students a place where they can go for help from peers outside the topic-specific discussion areas (Cowie & Khoo, 2014). |
| Setting up course introductions area (biography and photographs) | Ice breaking activities in which lecturers and students share their professional interests, learning goals, hobbies, favourite places, personality traits, and so forth (Bonk & Khoo, 2014). |
| Setting up private areas for student-lecturer interaction | Spaces designed to enable private communication between lecturers and students where the later can voice any frustration or personal matter that may be influencing his/her participation in the course. |
| Sharing insights and personal or professional experiences about the topic under consideration | Personalised and customised knowledge, skills, and attitudes brought by learners to the learning experience (Boettcher & Conrad, 2010). |
| Using emergent technologies for teaching | The lack of physical cues in online courses can be overcome with the use of emergent interactive technologies which may help lecturers to humanise online learning. |
| Using students' names and/or a more informal tone of communication | Friendly, open, inviting, and polite communication may foster a safe place for learning. Sharing anecdotes, humour, or simple musings can inspire students to share ideas (Collison et al., 2000). |

| | |
|--|---|
| STRATEGIC SCAFFOLDING | Alternative learning pathways that can be used in the learning context to address a variety of learners' needs (Stavredes, 2011). |
| Identifying misconceptions | Identification of misconceptions related to the content. This action is undertaken mainly by the lecturer. |
| Identifying areas of agreement and disagreement | In a constructive discussion, the emphasis is on critiquing ideas in order to reach a better understanding of the topic. Alternative perspectives or data contrary to a particular point of view are welcomed and encouraged (Bonk & Khoo, 2014). |
| Offering multimodal resources from diverse sources | Multimodal resources support a wide range of learning styles as well as enrich and ground the content in focus. The emphasis is on 'external' resources. |
| Injecting knowledge through tailored resources | Resources designed by lecturers and/or students are unique samples of expert knowledge that can be expressed beyond text (e.g., illustrations, podcasts, videos). |
| Providing timely feedback and resources | Timely feedback and/or just-in-time supplemental resources help learners to engage in the course and work on learning tasks. The emphasis is on time — feedback needs to be prompt rather than delayed. |
| Seeking to reach understanding | Summarising students' comments while weaving it through the content from the readings. This action is undertaken only by the lecturer. |
| PEER SCAFFOLDING | Peer scaffolding or peer facilitation is based on relationships between peers who apply a wide range of techniques to facilitate learning in asynchronous online discussions (Chan, Hew & Cheung, 2009). |

| | |
|---|--|
| Responding to other students' postings | Responding and/or elaborating on reasons for agreeing or disagreeing on points raised, or clarifying a statement in response for request for elaboration/clarification (Ng, Cheung & Hew, 2012). |
| Acknowledgment of peers' postings | Showing appreciation of others' contributions (e.g., offering thanks for a contribution or complimenting others for a helpful suggestion) (Ng, Cheung & Hew, 2012). |
| Questioning | Asking questions to seek clarification, stimulating elaboration, or enquiring about others' points-of-view (Ng, Cheung & Hew, 2012). |
| Initiating questions/statements | General invitation to contribute, for instance, 'any thoughts?', 'I am interested to see what others think', or when a student starts a new discussion thread. |
| Development of self-reflection | Learner self-reflection consists of a student's personal reflection on the topic-specific content, the learning process and the student's personal understanding (Bonk & Khoo, 2014). |
| Disagreement with others' ideas and explanation of personal perspective | Challenging others' perspectives, offering alternative suggestions/interpretation, indicating gaps or discrepancies, or raising concerns (Chan, Hew & Cheung, 2009). |
| Lecturers' guidance towards peer facilitation | Provision of peer facilitation guidelines. |
| Encouraging constructive peer feedback | Affirming the need and importance of students' contributions to the online learning community through responding to each other with questions, ideas and advice (Collison et al., 2000). |
| Summarising content | Synthesising understanding or interpretation of a series of postings by sharing reflection or elaborating a summary of the main topics discussed (Ng, Cheung & Hew, 2012). |

Appendix D: End-of-semester lecturer interview

1. Why do you teach educational leadership online?
2. What is your leadership style in online courses?
3. How did you co-teach with (lecturer's name) in this paper? Did you take turns? How did it work? Is that a workload strategy?
4. How would you describe your teaching presence in this online course?
5. What helps and what constrains online scaffolding?
6. How did the strategy of grouping students work in this paper?
7. For how long did students work in groups? Why?
8. Have you negotiated learning outcomes with students? How?
9. What is your approach regarding the discussion starters in this paper?
10. I have noticed a change in the nature of the postings. The later discussions were more structured and thoughtful. What was your approach to foster such critical thinking? (examples: assignment feedback, personal e-mails)
11. Have you used interactive technologies in this course? Please give me examples.
12. Have you encouraged students to give constructive peer feedback? How? Where?
13. How do you perceive the way that you gave feedback in this paper?

Appendix E: End-of-course student online survey

1. In this paper, to what extent did lecturers do the following?

Please choose the appropriate response for each item:

| | Never (0%) | Rarely (10%) | Sometimes (50%) | Frequently (70%) | All the time (100%) | N/A |
|--|-----------------------|-----------------------|-----------------------|-----------------------|---------------------------|-----------------------|
| Compared students' ideas | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Negotiated learning outcomes with students | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Increased focus on topic/task | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Exhibited think-aloud modelling | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Displayed their own personality with tone, graphics, and humour | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Were present | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Used questioning to create momentum in discussion | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Challenged your ideas | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Acknowledged your ideas | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Gave feedback | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Shared personal stories and opinions | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Summed up content | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Were a guide | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Used interactive technologies (e.g., Adobe Virtual Classroom, VoiceThread) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Identified areas of agreement and disagreement | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Recognised misperceptions | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Encouraged constructive peer feedback | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

[]

2. How would you define online scaffolding (support)? Please provide up to 3 examples of the most significant online support you received in this paper.

Please write your answer here:

[]3. To help students succeed in an online course, how important is it that the lecturers do the following?

Please choose the appropriate response for each item:

| | Not important at all | Somewhat important | Very important | N/A |
|---|-----------------------|-----------------------|-----------------------|-----------------------|
| Provide online participation protocols | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Offer clear instructions about weekly tasks and learning objectives | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Provide a schedule with topics and respective times for studying and discussion | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Provide clear and precise guidelines for assignments | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Encourage students to develop self-reflection as weekly tasks or assignments | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Create electronic assignment boxes | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Provide peer facilitation guidelines | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Set up areas for informal online discussion (e.g., "Cafe", "Can Anyone Help") | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

[]

4. In this paper, how often did you do the following?

Please choose the appropriate response for each item:

| | Never (0%) | Rarely (10%) | Sometimes (50%) | Frequently (70%) | All the time (100%) | N/A |
|--|-----------------------|-----------------------|-----------------------|-----------------------|---------------------------|-----------------------|
| Posted my reviews of the readings required by the lecturer | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Shared new resources and recent news | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Asked for clarification about peer postings | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| When I disagreed with my peers' ideas, I explained my own perspective | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Discussed the readings using real-world examples | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| When posting about alternative perspectives, I explained new concepts | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| For my postings, I created illustrations related to the content (e.g., diagrams, concept maps) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| In my postings, I responded to at least one peer posting | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| In my postings, I acknowledged peers' contributions | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Posted a general invitation for peers to contribute | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Developed critical self-reflection | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

| | Never (0%) | Rarely (10%) | Sometimes (50%) | Frequently (70%) | All the time (100%) | N/A |
|--|-----------------------|-----------------------|-----------------------|-----------------------|---------------------------|-----------------------|
| Summarised content | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Composed relevant postings (e.g., discussed references that supported my arguments) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

[]5. In this online paper, how often did fellow students (your peers) do the following:

Please choose the appropriate response for each item:

| | Never (0%) | Rarely (10%) | Sometimes (50%) | Frequently (70%) | All the time (100%) | N/A |
|--|-----------------------|-----------------------|-----------------------|-----------------------|---------------------------|-----------------------|
| Actively participated | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Made relevant postings | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Acknowledged and responded to other students' contributions and inquiries | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Developed interpersonal relationships | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Fostered a sense of community | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Left space for others' contributions | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Made connections with what had been said previously | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Used readings effectively by commenting on readings instead of directly quoting authors | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

[]6. What kinds of online support have you experienced in this online course? Please choose all that apply:

Please choose all that apply:

- Before the start of the semester all tasks were fully and clearly explained
- Before the start of the paper a complete and clear structure of resources was provided
- During the semester students were divided into smaller groups to help them deepen discussions
- Lecturers provided timely feedback during the course (e.g., answered e-mails)
- Lecturers offered formative feedback on students' postings
- Lecturers organised face-to-face opportunities with students for discussing particular content(s)
- N/A
- Other:

[]7. If you have any suggestion(s) for improving teaching and learning in this paper, please write in the space provided:

Please write your answer here:

[]

8. If you have experienced any sort of frustration and/or anxiety regarding any aspect of this course, please describe up to three examples in the place provided:

Please write your answer here:

List of Abbreviations

SPSS - Statistical Package for the Social Sciences

WCEL - Waikato Centre of eLearning

List of Acronyms

AOD - asynchronous online discussion

CMC - computer mediated communication

F2F - face-to-face

FOD - first online discussion

LMS - learning management system

MOOC - massive open online course

OLC - online learning community

OLE - online learning environment

SOD - second online discussion

TDT - transactional distance theory

ZPD - zone of proximal development

Glossary

Facilitator

Someone “who helps to bring about an outcome (as learning, productivity, or communication) by providing indirect or unobtrusive assistance, guidance, or supervision” (Merriam-Webster, 2015).

Cognitive presence

“The extent to which learners are able to construct and confirm meaning through sustained reflection and discourse in a critical community of inquiry” (Garrison, T. Anderson, & Archer, 2001, p. 7).

Social presence

The capacity of individuals to identify with the other participants or course of study, communicate purposefully in a safe space, and build interpersonal relationships gradually through reflecting their own personalities (Garrison, 2009).

Teacher presence

“The design, facilitation and direction of cognitive and social processes for the purpose of realising personally meaningful and educationally worthwhile learning outcomes” (T. Anderson, Rourke, Garrison, & Archer, 2001, p. 5).