Exploration of online activities that engage New Zealand middle school students

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Abstract

This exploratory case study explores student engagement in an online, middle school context at a New Zealand distance education school. Considering the three dimensions of student engagement—emotional engagement, behavioural engagement and cognitive engagement—an exploration was undertaken in to what types of activities engage students and whether certain aspects of learning activities engage students in different ways. Qualitative data analysis techniques were employed to analyse data collected through a questionnaire, interviews and asynchronous discussion forum comments from both students and teachers within the online classes. Statistical data from the learning management system (LMS) was also analysed to support the qualitative data collected. The study found that engaging students online is complex, with a variety of different activities required to engage students. Carrying out tasks outside of the LMS was considered to be particularly engaging as it enabled personalisation of learning. The students in the study tended to engage behaviourally with all activities. Cognitive engagement was seen to increase where students were able to be creative in their learning experiences. Emotional engagement could be elicited through the design and facilitation of the activities as well as through the ongoing development of a learning community in which the students feel safe to contribute. This case study looks at how this group of students engaged in online activities and provides suggestions as to what teachers can do to engage students online. It makes suggestions as to what schools and teachers could consider in terms of how to engage students online.

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1 Introduction

E-learning at the primary and secondary school levels of education is growing exponentially worldwide (Barbour, 2013). While it is an area of great growth, Barbour (2013) argues that there is not enough research to guide the effective design, delivery and support of online learning at this level.

In 2011, New Zealand was still regarded as being in the emerging phases of e-learning implementation at the compulsory schooling levels (Barbour et al., 2011). This was the case despite the Ministry of Education's promotion of e-learning since the early 2000s as a means to increase student achievement through higher engagement (Ministry of Education, 2006). A range of e-learning strategies have been implemented since the early 2000s (Parkes, Zaka, & Davis, 2011), however it appears there is still opportunity for growth.

For e-learning to expand within New Zealand schools it is important that current practices for teaching and learning online are researched and shared within the wider education community. This study aims to add to the literature surrounding e-learning in New Zealand at the compulsory schooling levels, focusing on what engages students online. While a number of studies have looked at online student engagement in higher education (e.g. Jeffrey, Milne, Suddaby, & Higgins, 2012; Kahu, 2011; Ross, 2010; Shu, Zhao, & Wan, 2012), fewer studies have been undertaken at the primary and secondary school levels (Means, Toyama, Murphy, Bakia, & Jones, 2009; Parkes et al., 2011). The studies that have been carried out have tended to focus solely on behavioural engagement—how often a student participated in an online activity. This study aims to expand on this by investigating how students engage cognitively and emotionally as well as behaviourally.

1.1 Rationale for study

Student engagement is recognised as an important component of all teaching and learning (Dixson, 2010) as it can lead to an increase in student achievement (Harris, 2008). As the uptake of e-learning is increasing both in New Zealand and around the world (Barbour, 2013) it is important that educators develop a good understanding of what engages students online in order to employ best practices in teaching online. While there has been a range of studies undertaken to look at student satisfaction in e-learning (e.g. N. S. Ali,

Hodson-Carlton, & Ryan, 2004; Richardson & Swan, 2003; Swan, 2002) and student engagement in online higher education courses (e.g. Jeffrey et al., 2012; Kahu, 2011; Ross, 2010; Shu et al., 2012), fewer studies have been carried out looking at e-learning at a primary and secondary level of schooling (Means et al., 2009; Parkes et al., 2011). Barbour (2010) commented that where there have been studies in e-learning at these levels, they have tended to focus only on teacher or administrator perceptions rather than also hearing the student voice. As Delisle (2012) so eloquently states, the students "are the best barometers we have to tell us what works and what does not…. It is time to let the collective voices of our students be heard and their ideas treated with the respect they deserve" (p. 63). Due to the paucity of research at these levels, and the lack of student voice within the studies, this is an area that needs to be researched (Barbour, 2011b).

Along with the need to hear the student voice, where online student engagement has been researched it has focused primarily on behavioural engagement. Emotional and cognitive engagement in e-learning has not been considered in as great a depth as behavioural engagement. This study aims to add to the literature by examining how students engage online behaviourally, emotionally and cognitively.

1.2 Research setting

An overview of the research setting for this study is outlined here. A detailed description is given in chapter three.

This research was carried out in a Year 7-10 integrated studies programme comprising three online classes at a New Zealand distance education school. The school supports students in remote areas including those for whom the mainstream system has not been suitable as well as New Zealand citizens living overseas. The online classes were delivered through the Desire2Learn learning management system (LMS) (Desire2Learn, 1999). Each of the online classes contained a mix of students from school Years 7-10. The participants in the study included the four teachers of the classes (two teachers were team-teaching one class) as well as 10 students in total. The majority of students were located around New Zealand, although a few were living in other countries. Each of the participants—both teachers and students—volunteered to be a part of the study. The classes were run completely online with learning material delivered through the LMS, although at times coursework was required to be posted to students in a traditional

correspondence mode of learning in cases where the work was unable to be delivered online.

While most of the fully online components of the coursework were delivered through the LMS, some activities required students to complete them outside of the LMS using Web 2.0 tools. Communication tools that were built in to the LMS were also used by the classes, as well as Skype and the standard telephone.

1.3 Research aim and questions

From the rationale given above, this study focuses on what is engaging to students online using student voice as a primary data source as well as the perceptions of the teachers. Other sources of data include asynchronous discussion forum comments and to a lesser extent statistical data from within the LMS. Collection and analysis of this data enables comparisons to be made between what students and teachers say happens online, with what actually engages students online within the LMS, taking into account the three types of engagement.

The overarching aim of this study is to explore what activities lead to increased student engagement by this group of online middle school students in a New Zealand distance education school, and what characteristics of the activities encourage the increased engagement.

The following research questions were developed around this aim:

Research questions

1. What types of activities do students prefer in online courses and what are the reasons behind their preferences?
2. What do teachers perceive engages students in online courses and why?
3. What encourages students to engage in online activities?

1.4 Structure of the thesis

This thesis is organised into six chapters as outlined here. Chapter one, the current chapter, has introduced the study, giving its purpose and outlining the aim and research questions. In chapter two, the current literature surrounding e-learning and student

engagement is reviewed, with a particular focus on online student engagement. Chapter three explains the methodology of this study including why the methodology was adopted. A detailed description of the case is given including the setting and the participants involved. It also outlines the ethical considerations made for the study. In chapter four, the findings of the study are presented. The results are organised by research question. A discussion of the results is presented in Chapter five, again based around the research questions and situated within the current research literature. Finally, chapter six draws conclusions based on the findings and outlines implications for teachers and the school in which the research was situated. Chapter six also suggests recommendations for future research.

2 Literature review

2.1 Introduction

Increasingly, the use of e-learning (learning online with the aid of the internet and digital devices such as computers) within the compulsory schooling sector both in New Zealand and around the world is gaining momentum (Barbour, 2013). As a result of this uptake, educators want to develop an understanding of good e-learning practices. To do this it is useful to examine existing e-learning practices in New Zealand and internationally. This includes investigating what engages students online.

Dixson (2010) identifies student engagement as an important component of all teaching—whether face-to-face or online—and "therefore it is imperative that we learn what engages students in order to foster effective online learning environments" (p. 1). Research into online student engagement is important as increases in student engagement can lead to increases in student achievement (Harris, 2008).

Extensive e-learning research has been carried out which has been focused on tertiary education and institutions. A number of studies in higher education have looked at student satisfaction of e-learning courses (e.g. N. S. Ali et al., 2004; Richardson & Swan, 2003; Swan, 2002). Higher education studies of student engagement in e-learning courses is a growing area of research (e.g. Jeffrey et al., 2012; Kahu, 2011; Ross, 2010; Shu et al., 2012). Much less research into e-learning however, has been conducted at the primary and secondary schooling levels (Means et al., 2009; Parkes et al., 2011). Where research has been carried out at this level, it has focused predominantly on teacher or administrator perception of how a course has been delivered or how the students have engaged with the course (Barbour, 2010). It is important to understand the viewpoint of the teachers and administrators running the courses, however it is also important to hear from the students to help develop a more detailed understanding of student engagement in the courses. There has been little student voice in regards to e-learning at this level of education, making it an area that needs to be researched (Barbour, 2011a). Delisle (2012) stated that:

> *...the consumers of our lessons and lectures, are the best barometers we have to tell us what works and what does not, to let us know which classroom conditions stimulate learning and which ones stifle it, and to inform us about the distinction between*

> *promising practices and timeworn tedium. It is time to let the collective voices of our students be heard and their ideas treated with the respect that they deserve. (p. 63)*

The statement above discusses students in a classroom context, however it is still valid in any educational context including e-learning as, regardless of the context or mode of learning, the students remain the consumers of the lessons.

This chapter begins by developing an understanding of e-learning and online learning, what these look like in schools and what is meant by the terms in this research project. Secondly, the term 'student engagement' is defined and a brief description of what instruments have previously been used to measure and analyse student engagement is given. Thirdly, online student engagement is considered, to gain an understanding of what it looks like online and how it is measured.

2.2 E-learning

The term *e-learning* has evolved into an overarching term for a number of different styles of teaching using digital technologies. It encompasses teaching and learning approaches such as *blended learning*, *hybrid learning*, *flexible learning*, *online learning and blended online learning*. Nichols (2003) describes e-learning as a *means* of learning rather than a *mode* of learning as e-learning can be found and used in both face-to-face and distance education.

The New Zealand Ministry of Education (2009) defines e-learning as "learning that is enabled or supported with the use of information and communications technologies (ICT)" ("What is e-Learning," para. 1). They go on to suggest that e-learning usually involves interaction over the internet between students and their teachers or with other students.

Nichols (2008) explains the terms *blended*, *hybrid* and *flexible learning* as learning that takes place partially face-to-face and partially through "distance approaches" (p. 4), usually with an e-learning/electronic component. An alternative view of the term *flexible learning* is offered by Bates (2006). He states that "flexible learning may include distance education (learning that occurs at a distance from the institution rather than on site, face-to-face), but it also may include delivering face-to-face" (Bates, 2006, p. 5). The use by Nichols of the phrase, "distance approaches", suggests that he does not necessarily mean

that the learning must occur at a distance from the physical school and therefore appears to agree with Bates' (2006) definition. "Distance approaches" may indicate that the methods of teaching used may be more commonly associated with distance education rather than with face-to-face learning.

Many schools across New Zealand are beginning to take a blended learning approach as defined by Nichols. However, not all e-learning components of a blended learning situation are required to occur at a distance. Some students may be required to carry out online tasks at school by replacing some activities in the classroom with others using technology (Wilson, 2012). For example, Parkes et al. (2011) discuss a secondary school blended learning course where some students did not have access to a computer at home and therefore used school computers to fulfil the online component.

Blended learning is not the only approach used. Online learning usually involves a computer and an internet connection with access to the World Wide Web (Bates, 2006), although mobile devices such as smartphones and tablets are now becoming more common as a replacement to standard desktop or laptop computers. Online learning can generally be considered to be a part of distance education as there is no physical face-to-face time between teacher and student. Students and teachers may meet virtually through video calling or other synchronous (occurring at the same time) chat tools available on the internet or over the phone. Nichols (2008) says that "pure online learning uses e-learning tools in a distance education mode. It uses technology (usually the internet) as the sole medium for all student learning and contact" (p. 4). The definition by Bates (2006) underpins this investigation as the online classes use learning material delivered over the internet. The terms, 'E-learning' and 'online learning' are used interchangeably throughout this thesis.

2.2.1 E-learning in schools

Around the world, the various forms of e-learning discussed above have been used in schools. A number of countries have online learning programmes including Singapore, Turkey, China, Iran, Japan, the United Kingdom, Australia and New Zealand. Some online learning programmes are so well ingrained in the country or state that there is an online teaching component in initial teacher training courses (Barbour, 2009; Kennedy & Archambault, 2012).

In relation to online learning, virtual and cyber schools have grown quite rapidly over the past two decades. Virtual and cyber schools have been developed particularly in the United States and Canada to teach full-time primary and secondary students online (Barbour, 2009). An issue in some virtual schools is the mixed quality of asynchronous (not occurring at the same time) instruction that is given (Barbour, 2009). This is a particular issue for virtual schools that deliver their content predominantly asynchronously, rather than through synchronous means. Barbour (2009) explains that in many asynchronous courses, the focus is on content delivery rather than on actual teaching. Barbour compares the online content delivery as like giving a classroom student a textbook with some questions to answer, rather than having a teacher help to explain or guide a student through their learning. This issue of quality in virtual schooling has been recognised by Cavanaugh, Barbour, and Clark (2009) as an area of concern. Cavanaugh et al. (2009) argue that there is currently no guarantee that better teaching and learning will occur online than in a traditional face-to-face setting.

The New Zealand Ministry of Education (MOE) have indicated that e-learning can help students achieve their full potential (Ministry of Education, 2006). They state that "e-learning can provide accessible, relevant, and high-quality learning opportunities so that every student is better able to achieve their full potential" (Ministry of Education, 2006, p. 4). Dixson (2010) reports that a number of researchers have found that online learning is at least as good as traditional learning methods. Often online, distance university learners—where there are opportunities for interaction with instructors and other students asynchronously—will do better than traditional face-to-face learners (Maki & Maki, 2007), however this is not generally the case in New Zealand. Barbour and Johnston (2013) compared the results of students in Florida Virtual School (FLVS) with offline students within the State of Florida as well as with all students across the United States. They found that the FLVS students were achieving higher than other Florida students overall and only slightly below all students across the whole United States.

As mentioned earlier, New Zealand has developed online learning programmes, however virtual schools have not become established. An international survey of online and blended learning outlined that New Zealand is still "at the emergent stage in terms of online learning" (Barbour et al., 2011, p. 112). The MOE has been moving towards greater use of e-learning in schools since the early 2000s as they believe that e-learning will help increase student achievement by engaging students (Ministry of Education,

2006). The MOE made progress in implementing e-learning in schools through several ICT strategies, as well as a 'laptops for teachers' programme and cluster-based professional development for teachers (Parkes et al., 2011). The clusters were regionally-based programmes set up through the Virtual Learning Network (VLN) to offer students subjects through video conferencing and some web-based material online alongside the professional development for teachers (Barbour, 2009). Although seen as successful for the schools and teachers who took part (Sahin & Ham, 2010), it was reported by Johnson, Hedditch, and Yin (2011) that by 2011 "58 percent of primary schools and 38 percent of secondary schools have never participated in an ICTPD cluster" (p. 66). This suggests that the initial successes of the VLN and ICT professional development clusters could be expanded on.

The drive for greater uptake of e-learning in New Zealand schools has continued since the last national MOE ICT strategy ended in 2010 with the development of the e-learning planning framework (eLPF) (Ministry of Education, 2011). The eLPF is a framework to guide schools to firstly see where they are currently positioned with adopting and implementing e-learning. Secondly, the eLPF helps schools to plan strategically how to progress e-learning in the school. The New Zealand Government has additionally committed to developing a national network for schools (the Network for Learning), as a part of the national roll-out of ultra-fast broadband. This enables teachers and students to share and collaborate across the country (New Zealand Education and Science Committee, 2012).

Within New Zealand, Te Aho o Te Kura Pounamu – The Correspondence School (Te Kura) has been the principal distance education provider to primary and secondary students since 1922 (Te Aho o Te Kura Pounamu, 2012). Te Kura was set up initially to teach students in remote areas but now supports a range of students across New Zealand, many of whom have disengaged from the mainstream system. The school also delivers the New Zealand curriculum to New Zealand citizens living overseas. In 2008, Te Kura began to blend online learning with their printed materials (Davis, 2010), as well as starting to develop fully online courses where appropriate. Courses are continuing to be developed and implemented within their LMS.

2.2.2 Learning management systems

The LMS has become a standard technology in educational institutions over the past decade, particularly in higher education (Mott, 2010). The LMS is commonly used to deliver teaching and learning material to students and they generally offer tools for communication and assessment. Common examples of LMSs include Blackboard and Moodle. The LMS used in the school being studied is Desire2Learn (Desire2Learn, 1999). LMSs generally include a way to create, manage and distribute learning content—a content management system; asynchronous (and sometimes synchronous) communication tools; online assessments such as an assignment dropbox for individual assignment submission and a quiz functionality that can deliver a range of question types including multiple choice, true or false and long or short answer questions (Wicks, 2010). LMSs are often considered to be teacher and institution centred rather than student-centred (Mott, 2010; Severance, Hardin, & Whyte, 2008). They are often set up to be quite structured and inflexible (Bogdanov, Ullrich, Isaksson, Palmer, & Gillet, 2012; Sclater, 2008), making it difficult for students to personalise their learning experience. The Moodle LMS however, has been designed specifically with students in mind by allowing them to add resources and learning, for example, to activities that have been initially set up by a teacher (Dougiamas, 2010).

A number of researchers (e.g. Dabbagh & Kitsantas, 2012; Mott, 2010; Sclater, 2008; Tu, Sujo-Montes, Yen, Chan, & Blocher, 2012) have promoted the move to personal learning environments (PLE), made up of a range of Web 2.0 tools, as an alternative to a LMS, because they believe that LMSs are not very student-centred. They argue that the PLE gives choice to individuals by enabling them to use a range of internet or Web 2.0 tools such as blogs, wikis and social networking in their learning (Mott, 2010), helping to bring together formal and informal learning opportunities (Dabbagh & Kitsantas, 2012). Downes (2005, 2007) highlights how internet users are creating, publishing and sharing their work with others online. This may require schools to have options for where students can create, publish and share their work. The learning environment, whether it be an LMS or a PLE, or a combination of the two, is an important factor in the engagement of students. Therefore, schools need to carefully consider their options.

2.3 Student engagement

Dixson (2010) states that, "… one of the primary components of effective online teaching (or any teaching, for that matter) is student engagement" (p. 1). However, Parsons and Taylor (2011) describe the term 'student engagement' as being 'ambiguous'. When student engagement is discussed, there appears to be a presumption that everyone knows what is meant by the term. According to Gibbs and Poskitt (2010), student engagement is a term that is not clearly defined. A search of the literature shows that the term is, in fact, "not easily defined" (Zepke, Leach, & Butler, 2010, p. 1); is used in various ways (Bowen, 2005; Gibbs & Poskitt, 2010; Zepke & Leach, 2010); or in some cases is not defined at all (Gibbs & Poskitt, 2010). Vibert and Shields (2003) highlight several differing understandings of student engagement and point out that when researchers try to find an answer to what student engagement is, it "unsettles people, revealing fundamental disagreements about educational purposes" (p. 226). Harris (2008) stated that "while there is general agreement that student engagement produces positive outcomes, defining the concept is problematic as there is disagreement about what counts as student engagement" (p. 58). This lack of a clear definition makes it difficult to know how student engagement could, and should be measured (Parsons & Taylor, 2011). The term needs to be better understood by those in education in order to "increase its usefulness" (Harris, 2008, p. 75). The following section explains how the term 'student engagement' is used in the literature and then defines its use in this study.

2.3.1 Types of student engagement

Although there is a range of understandings of student engagement, a view across the literature shows that there is some agreement. Student engagement is multi-dimensional, encompassing three key dimensions—*behavioural engagement*, *cognitive engagement* and *emotional engagement* (Fredricks, Blumenfeld, & Paris, 2004). Different researchers may give the three key dimensions different names (e.g., emotional engagement is sometimes referred to as psychological engagement), but the ideas behind them are similar. The three types of engagement are explained below.

Behavioural engagement is students attending school (and class); doing what is required of them in terms of teacher and school expectations and rules; and participating in extra-

curricular sporting and social activities (Fredricks et al., 2004; Gibbs & Poskitt, 2010; Harris, 2008).

Cognitive engagement is where students invest personally into their learning (Fredricks et al., 2004; Harris, 2008) and understanding of complex ideas. It is focused, strategic and involves deep thinking. Cognitively engaged students plan, monitor their progress and review regularly. Cognitive engagement is sometimes measured as 'time on task'.

Emotional engagement is seen when students have positive reactions to their school or class environment – the teachers, other students and the institution, as well as to their learning (Gibbs & Poskitt, 2010; Harris, 2008). It is to do with the students "interest, belonging and attitude towards learning" (Shu et al., 2012, p. 350). Meyer and Turner (2006) suggest that the learning environment plays a critical role in emotional engagement.

While the explanations given above provide an understanding of the different types of student engagement and how they may be seen at a given point in time, they do not consider other factors that can influence a student's engagement or motivation. These include gender, culture, socio-economics and geography (Zepke et al., 2010). These other factors are outside the scope of this investigation.

Gibbs and Poskitt (2010) highlighted that students need to be behaviourally engaged (i.e., in class) and emotionally engaged (i.e., feeling comfortable and connected) before they can become cognitively engaged. Findings from Lankshear and Knobel (2005) indicate that some students are able to appear on task while actually taking part in off-task activities. They appear to be engaged behaviourally but they are not cognitively engaged.

This research focuses on the three main types of student engagement. Cognitive engagement will be considered through looking at students' deep or critical thinking within an activity. Behavioural engagement will be considered in terms of students choosing to go online and doing what is required of them by their teacher. Emotional engagement is considered by looking at how students react to their learning environment including interacting with other students and their teacher.

The next section looks at student motivation as an influence on student engagement.

2.3.2 Motivation

Student motivation is an area that has links to both student engagement and student achievement. According to Gibbs and Poskitt (2010), the terms motivation and engagement are sometimes used interchangeably in the literature. Brophy (2010) explains that a student's motivation to learn is about the quality of cognitive engagement and that "performance is highest when motivation is at an optimal level" (p. 12). There are a variety of motivational concepts to help explain why learners do what they do. Two broad types of motivation have been recognised—intrinsic and extrinsic motivation—however these are not the only types. Deci and Ryan (2008) state that, "intrinsic motivation involves doing a behaviour because the activity itself is interesting and spontaneously satisfying" (p. 15). Learners who are extrinsically motivated engage in an activity because it "leads to some separate consequence" (Deci & Ryan, 2008, p. 15). The simplest examples of this would be where completing an activity leads to a reward being given, or a punishment given for not completing it. Park (2013) states about intrinsic motivation that "it is very rare that students have this kind of motivation, especially toward activities arranged in a school setting" (p. 48). It is necessary for teachers to consider how student motivation affects how students are engaged in various activities and how teachers can facilitate the learning situation so as to increase student motivation.

2.4 Online student engagement

According to Dixson (2010), while there are a large variety of online activities that can engage students, there is no one particular activity that specifically leads to higher online student engagement. Dixson (2010) highlighted research which indicates online students learn more and are more engaged than traditional students, and achieve more highly. This increase in engagement and achievement may be due to greater emphasis being put on the online student to self-engage in their learning (Wickersham & Dooley, 2006). While the research by Wickersham and Dooley (2006) refers to higher education settings, students in this study are required to self-engage in their learning to a certain extent due to studying at a distance from their teacher.

There are several components that have been identified that help to engage students online, many of which fit into Garrison, Anderson and Archer's (1999) community of inquiry model. The community of inquiry model describes an educational experience

made up of social presence, cognitive presence and teaching presence. These will be developed further in the following sections.

2.4.1 Social presence

Social presence is the degree to which online participants feel connected to one another (Swan & Shih, 2005). As a participant in the online course builds their presence, there develops a greater sense that the person is 'real' (Garrison et al., 1999; Gunawardena & Zittle, 1996). As each participant develops their social presence online, a community of learners can develop (Tu & McIsaac, 2002). The concept of connectedness, which has a close link to social presence, has been said to be important to online learners as it can help to reduce the feelings of isolation that often accompany this style of learning (Bolliger & Inan, 2012; Dixson, 2010). Hughes (2010) explained that "learners who do not 'belong' in a learning situation … may eventually withdraw" (p. 49). Withdrawing at compulsory schooling levels may not necessarily mean leaving the course or class, but rather choosing not to participate in activities. Positive social presence or connectedness leads to students feeling emotionally comfortable in the learning environment, which Gibbs and Poskitt (2010) identify is required (along with behavioural engagement) before students can become cognitively engaged.

2.4.2 Cognitive presence

Cognitive presence is "the extent to which the participants in any particular configuration of a community of inquiry are able to construct meaning through sustained communication" (Garrison et al., 1999, p. 89). Cognitive presence is closely related to critical thinking and is focused on higher-order thinking processes including creativity and problem solving, rather than on individual learning outcomes (Garrison, Anderson, & Archer, 2001). Interaction and collaboration are both important in establishing cognitive presence.

Moore (1989), when defining the types of interaction, suggested that there were three different types of interaction: learner-content interaction; learner-instructor interaction; and learner-learner interaction. Moore describes learner-learner interaction as "an extremely valuable resource for learning, and is sometimes even essential" (Moore, 1989, p. 4). The term 'dialogue' is used by Coomey and Stephenson (2001) in place of

interaction as interactions are often in the form of asynchronous or synchronous discussions online.

Interactions can often be seen in an online environment through discussion forums, and statistical data from LMSs and can therefore be a useful measure of student engagement. Wagner (1994, as cited in Thorpe & Godwin, 2006) discussed interaction as reciprocal events that require at least two objects and two actions in order to occur. The objects may be human (e.g. other students or a teacher) or non-human (e.g. learning content). However, Thorpe and Godwin (2004) point out that if we use this idea, that some online content may be limited in terms of interaction. For example, if a student is using a digital text book, they are able to perform an action on it such as searching for a key word, but the digital text book cannot create a reciprocal action. Interactions therefore may not always be reciprocal in nature.

Collaboration, of which interactions are a critical component, has been identified as important for increasing student engagement (Chen, Lambert, & Guidry, 2010) and achieving learning outcomes (Garrison, 2006). Garrison (2006) suggested that online learning may have an advantage over face-to-face learning in supporting collaboration and a sense of community. Garrison states that this is because the online environment is often more group-centred and there is greater opportunity to build on the comments of others. While interaction is recognised as important in engaging students, Garrison and Cleveland-Innes (2005) state that it is not a guarantee of cognitive engagement of students. There are also issues to consider when trying to interact and collaborate across multiple time zones as this can be a cause of stress and difficulty for students trying to find appropriate times to meet and contribute to discussions (Liu, Liu, Lee, & Magjuka, 2010).

2.4.3 Teaching presence

Teaching presence, according to Garrison et al. (1999), consists of two functions—design of the educational experience and facilitation. The authors state that the educational design would usually be the role of the teacher, however facilitation could be the responsibility of the teachers or any other member of the community. The components of educational design and facilitation in relation to teaching presence are outlined in the following sections.

Design of the educational experience

The design of the activity includes the level of difficulty, how it promotes student interest and the purpose of the activity. Student disengagement in activities can occur when the activities are not aimed at an appropriate level of difficulty for the learners (Burger, Nadirova, & Keefer, 2012; Ministry of Education, 2008). When activities are too easy, students can feel bored, and when they are too difficult, anxiety can occur (Liao, 2006). Burger et al. (2012) also identified student disengagement occurring when the work given is not interesting or relevant to them.

Interest

Designing activities that develop and hold students interest is an important aspect of the educational experience. Ainley, Hidi, and Berndorff (2002) outline three types of interest—individual interest, situational interest and topic interest. Individual interest is where an individual has the inclination to focus on particular objects or engage in particular activities over a sustained period of time. This tends to result in increased learning (Ainley et al., 2002). Situational interest is a result of environmental stimuli which has an effect on the emotions (Ainley et al., 2002), so is likely cause the student to engage emotionally, although behavioural and cognitive engagement is also possible. Care needs to be taken in what stimuli engages the emotions as Clemons (2005) identified that negative emotions can decrease the brains efficiency. Topic interest tends to be most relevant for educators as it is "the interest elicited by a word or paragraph that presents the reader with a topic" (Ainley et al., 2002, p. 546). Topic interest could help lead to all three types of engagement.

While Renninger and Hidi (2011) acknowledge that interest is an important part of increasing student engagement, Harris (2011) argues that if teachers focus too much on student individual interest it could be at the expense of cognitive engagement. This suggests that teachers need to find a balance between engaging a student through interest and engaging them in required learning. It is necessary then for online activities, where possible, to be appropriately challenging to the students and of interest to them.

Purpose

The purpose of an activity is also important in engaging students. Harris (2008) reported that students failed to engage if there was no purpose to what they were learning. One student Harris discussed could link her school work with her future goals once a purpose was given for her work. The need for activities to be purposeful is reinforced by Kuh, Cruce, Shoup, Kinzie and Gonyea (2008) in their study of first-year university students, "…student engagement in educationally purposeful activities is positively related to academic outcomes" (p. 555). Students are more likely to cognitively engage in an activity if they see a purpose in it.

Enjoyment

Designing activities that students enjoy has also been found to influence student engagement positively as seen in the study by Wood (2012). Skinner, Kindermann, Connell, and Wellborn (2009) identified fun and enjoyment as part of what makes a learning activity emotionally engaging. This highlights the importance for teachers of designing activities that are enjoyed by students; however this should not be at the expense of meaningful learning.

Facilitation

The teacher in an online course plays an important role in helping students to engage through facilitation of the learning. Not only do they have to ensure that activities are interesting and have a purpose, but they may also need to motivate students to engage and learn. Developing their own social presence and connectedness with students online can help in the emotional engagement and motivation of students (Bolliger & Inan, 2012; Dixson, 2010). The teacher giving feedback, supporting the students through scaffolding and making themselves available is a part of facilitation.

Feedback

Feedback as a part of facilitating learning is a key component of online learning as a lack of feedback has often been given as a reason for withdrawing from online courses (Ertmer et al., 2007). Kuh (2003) stated, about face-to-face learners, that if prompt feedback is given students will learn more. The giving of prompt feedback by teachers to students

also helps to reduce feelings of isolation of online students (Robinson & Hullinger, 2008) therefore helping with emotional engagement.

Although not specifically discussing online feedback, Hattie and Timperley (2007) identify four levels of feedback. These are: feedback about the task; feedback about the processing of the task; feedback about self-regulation; and feedback about the self as a person. The authors state that feedback about the self as a person is often seen but is not very effective. This type of feedback praises the student and makes them feel good about themselves but does not contain detail relating to the task. Self-regulatory feedback concerns the students monitoring their own learning and actions towards the learning goals (Hattie & Timperley, 2007; Zimmerman, 2002) and is quite effective for some students. Learners who find it difficult to reflect on their own work rely on external sources for feedback such as a teacher (Hattie & Timperley, 2007). The other two types of feedback discussed by Hattie and Timperley (2007)—feedback about the task and processing of the task—are identified as effective due to their specific focus on the task. Feedback about the task is corrective, while feedback about the processing of the task helps to move the students from a surface understanding of the learning to a deeper level of understanding (Hattie & Timperley, 2007), allowing students opportunity to improve in future activities.

Garrison et al. (1999) acknowledged that facilitation of the learning is not only the role of the teacher. Feedback therefore, does not always need to come exclusively from the teacher, but can also come from other students. Ertmer et al. (2007) suggests that requiring students to give feedback to peers can help reduce some of the recognised time pressure on teachers who are teaching online. Reese-Durham (2005) explains that if peer feedback is given, then the peer giving the feedback is also likely to be learning. Gielen, Peeters, Dochy, Onghena, and Struyven (2010) argue that it is important that training is given to students on how to give appropriate feedback to peers. They also state that peer feedback cannot always replace the feedback of the ‘expert’ teacher. Therefore, the teacher must find a balance between expecting peer feedback and giving expert feedback to students.

Scaffolding

Scaffolding has been identified as another key factor in engaging students online. Cole and Kritzer (2009) discuss breaking larger projects into smaller parts and having each

part handed in for review and feedback before putting together the final project. Students in Cole and Kritzer's study shared how being required to complete and submit small parts of the paper for assessment over time guided them to completing the final product. Scaffolding helps students to be cognitively engaged on smaller parts of a course and build one part on to another.

Teacher availability

Teacher availability has been found to be very important in online situations. Being available through various communication channels (e.g. email, phone, instant messaging) helps to alleviate student frustration (Cole & Kritzer, 2009). Having technical assistance and support for learning available, whether from the teacher or a dedicated help desk, also helps to reduce frustration and increase student learning (Lee, Srinivasan, Trail, Lewis, & Lopez, 2011). A reduction in student motivation was observed by Hartnett (2010) when students did not feel supported by teachers. Being able to resolve some of the difficulties or answering questions students have, may lead to a positive impact on all types of student engagement. As with other facilitation involved in teaching presence, support can also come from peers within the learning environment.

Teacher engagement

Borup, Graham, and Drysdale (2013) have taken the concept of teaching presence one step further with their recent construct of teacher engagement. The authors used the word 'engagement' rather than 'presence' to show that teacher engagement is active. Six elements make up Borup et al.'s teacher engagement. These are: Designing and organizing; facilitating discourse; instructing; nurturing; motivating; and monitoring. While all of these elements fit within the concept of teaching presence, the authors have separated them out to describe what a teacher needs to actively be doing to engage students online. This idea of teacher engagement shows that a teacher needs to play an active role in online teaching and learning, and not only look to the students to engage.

2.5 Measuring student engagement

Student engagement is a difficult construct to measure, partially due to the various types of engagement. As a result, there is debate over what data is most appropriate for measurement (Carter, Reschly, Lovelace, Appleton, & Thompson, 2012). Behavioural

engagement such as the raising of hands and asking of questions is easily observed in classrooms and has been the focus of a lot of early student engagement research (Appleton, Christenson, Kim, & Reschly, 2006; Carter et al., 2012; Handelsman, Briggs, Sullivan, & Towler, 2005). Other types of engagement have been shown to be more "internally represented" (Carter et al., 2012, p. 63) and are therefore more difficult to observe. As a consequence, researchers have developed several instruments to measure student engagement, most of which focus on the students' self-report data, by asking internally reflective questions (Appleton et al., 2006; Carter et al., 2012).

Several instruments have been used in higher education to measure student engagement, including (but not limited to) the National Survey of Student Engagement (NSSE) (Kuh, 2003; Price & Baker, 2012); the Australasian Survey of Student Engagement (AUSSE) (H. Coates, 2008; Hamish Coates, 2010); The Class-Level Survey of Student Engagement (CLASSE) (Ouimet & Smallwood, 2005); and the Student Engagement Questionnaire (SCEQ) (Handelsman et al., 2005). The main instrument that has been used to measure student engagement at school-level is the Student Engagement Instrument (SEI) (Appleton et al., 2006; Carter et al., 2012). All of these instruments that measure student engagement ask students to rank statements about their learning experiences. While the statements do cover the various types of engagement, they do not specifically look at what learning has actually taken place and therefore it is unclear how much cognitive engagement occurred.

2.6 Measuring online student engagement

Online engagement has been measured in different ways and to varying degrees of depth. In early research it was generally conceptualised as participation, focusing primarily on quantity. More recently the quality of student engagement has also been measured. The ways online engagement has been measured include number of page hits and number of discussion forum posts read and authored through learning analytics from the LMS; and through participation in online activities. These are outlined below.

Most LMSs provide basic system level data on student interaction with learning content (L. Ali, Hatala, Gašević, & Jovanović, 2012). This data may include low-level statistics such as the number of 'hits' on a content webpage or the number of discussion forum posts read or postings made (Xu, 2010). This basic data measures the behavioural

engagement of the student. The system level data provided will not give any information as to the depth to which students are cognitively engaged.

A relatively new research area of 'learning analytics' has grown out of the need for more in-depth data of online courses in order to better understand how students are interacting; what they are clicking on and what they are completing online (L. Ali et al., 2012). Learning analytics can not only look at what a student is doing in an online course, but follow their trail or "digital footprint". It can be used by instructors and administrators to see the process of learning that is occurring and is useful in supporting students at risk of dropping out (Siemens & Long, 2011). L. Ali et al. (2012) discuss learning analytics as enabling "meaningful linking of students' learning activities and their interactions with the learning contents, as well as with the other participants of their learning processes" (p. 471). The use of learning analytics data is useful in determining how students are behaviourally engaged and could be used to support teachers in recognising a student's cognitive engagement. The use of learning analytics is outside the scope of this study due to its lack of availability at the research site.

Hrastinski (2009) found that "online participation drives online learning" (p. 79). Participation of students can be seen through the LMS system statistics or through learning analytics. Participation in this sense would often refer to a posting or comment made by a particular student in a discussion forum. It is possible however, that a student may 'participate', and therefore 'engage' by simply saying, for example, that they agree with a previous student. This means that a count of discussion forum posts, for example, will only give an indication of behavioural engagement and not cognitive engagement. A more in-depth view of the content of the discussion forum posts is necessary to find evidence of cognitive engagement as this is seen as a very important component of online courses (Marra, Moore, & Klimczak, 2004). Zhu (2006) states that the discussion forum is "critical for constructing new understanding and knowledge" (p. 451). It makes sense then, that the place where the 'new understanding and knowledge' is demonstrated should be analysed for evidence of cognitive engagement.

Wise, Speer, Marbouti and Hsiao (2012) suggest that there is another type of engaged student in an online course – the student who engages by 'listening'. They may be reading and thinking about the discussion going on, but not necessarily posting or commenting. These listening students may be described in the past as *lurkers*, however it might not be

an accurate use of the term. Preece (2000, as cited in Webb, Jones, Barker, & van Schaik, 2004) says that a lurker is "someone who does not participate; he observes what is going on but remains silent" (p. 87). This is similar to the concept of the legitimate peripheral participant (Lave & Wenger, 1991). This participant is often simply observing what is going on within the online community for a while, during which time they are becoming familiar with how to engage and interact. Some listening students may make it difficult to measure student engagement in online courses, but others could post a few comments that demonstrate in-depth thinking and understanding. Wise, Hsiao, Marbouti, Speer, and Perera (2012) observed five different approaches to online listening. The *content coverage* approach is where the student reads all posts but does not consider them in their own posts. The *interactive* approach, where students focus on a smaller number of posts and use them in building their own conclusions. The third approach is the *targeted* approach where the student focuses on certain posts and disregards the rest. The *social coverage* approach sees the student acknowledging others' posts through a conversational style. *Disregard* is the final approach, where most of the posts are ignored by the student. In the study by Wise, Hsiao, et al. (2012), the student with the highest grade out of the five students observed, used the *content coverage approach* while the lowest grade was attained by the student using the *social coverage approach*. The student who disregarded most of the posts scored the second highest grade, equal with the student using the *interactive* approach. This suggests that it is still unclear as to the impact of different online listening approaches to student achievement.

There is limited statistical data that can be gathered about the engagement of listening students online other than the number of posts or content pages read as described above. The learning theory and pedagogy applied by the teacher would have an impact on how important participation is in an online course. One could argue that the listening student is *participating* in the course, but simply in a different way to the student who engages by posting in a discussion forum. This study looks at the number of discussion posts authored by students as an indication of behavioural engagement.

2.7 Conclusion

Student engagement is a broad area in which there are a range of understandings amongst teachers. Researchers have identified three main types of engagement, behavioural, emotional and cognitive. These three types do not stand alone, but build one upon the

other. A student is unlikely to be cognitively engaged unless they are already behaviourally and emotionally engaged (Gibbs & Poskitt, 2010). While a number of studies have looked at online student engagement, many of them have either focused solely on student perceptions of what they did in a course and how they felt or they have focused on the statistical data available within an LMS which can only give information on behavioural engagement. Other studies have only focused on teacher or administrator perceptions of how students have engaged in the online courses. This gives an opportunity within this study to listen to both the teacher and student voices, as well as consider how students are actually engaging online within the LMS by examining asynchronous discussion forum posts for evidence of the various types of student engagement. Additionally, there is limited studies on online student engagement at a primary and secondary level of schooling, giving a further opportunity to add to the growing body of research on student engagement at this level.

In the next chapter, the methodology chosen for the study is discussed. The literature on online student engagement is then considered in planning the data collection, taking into account any ethical considerations.

3 Methodology

3.1 Introduction

This chapter sets out the methodological approach that guided the research and justifies its selection by the researcher. It outlines the researcher's perspective of knowledge—what it is, how it is constructed and how it is researched. Data collection methods are discussed as well as limitations in using the chosen method. Ethical considerations are also discussed.

3.2 Focus of the investigation

The aim of this study is to explore what activities lead to increased student engagement by online middle-school students in a New Zealand distance education school. The following research questions have been developed around this specific context:

Research questions

1. What types of activities do students prefer in online courses and what are the reasons behind their preferences?
2. What do teachers perceive engages students in online courses and why?
3. What encourages students to engage in online activities?

In order to choose the most appropriate approach to carrying out the investigation, an understanding of how knowledge is perceived, constructed and researched is required. The following section discusses various understandings of knowledge.

3.3 Research methodology

There are several different worldviews that are used in research. Creswell and Plano Clark (2011) highlight four worldviews—positivist, constructivist, participatory and pragmatist. Positivism and constructivism are the two most commonly associated with quantitative and qualitative methodologies respectively. Participatory and pragmatist worldviews were not considered as appropriate for this study because participatory research has a political agenda and focuses on bringing change to participants or the institution, and the pragmatist worldview focuses on a problem and finding solutions to

the problem (Creswell, 1994). This study focused on exploring online student engagement rather than bringing about change or solutions to a problem.

Positivism focuses on explaining, predicting and controlling through verifying hypotheses and establishing facts or laws (Guba & Lincoln, 1994). Positivism assumes there is only one reality where researchers can "reject or fail to reject hypotheses" (Creswell & Plano Clark, 2011, p. 42). The researcher uses deductive methods to test theories and has an objective viewpoint (Tashakkori & Teddlie, 1998). As there is only one reality, other researchers could conduct the research and would find the same 'reality'.

The constructivist worldview aims to develop understanding through using various individual understandings or perspectives to reconstruct knowledge (Creswell & Plano Clark, 2011; Guba & Lincoln, 1994). The constructivist views knowledge, not as an absolute, but as based on experiences and interactions, therefore each individual has their own reality of an event (Charmaz, 2003). The researcher admits bias as they also bring in a particular viewpoint or interpretation of the phenomenon being studied (Creswell & Plano Clark, 2011; Tashakkori & Teddlie, 1998). Erickson (1984) discusses the requirement of a researcher to have disciplined subjectivity. The researcher needs to be open with what they have observed or gathered evidence on. Erickson compares a researcher who over-emphasises a particular area in their research as being like a caricaturist who makes a feature of a portrait much larger than it really is. A qualitative researcher needs to be aware of their own pre-understandings and biases and ensure they look at all the evidence that is being presented to them.

The research questions given above require the seeking of the various participant perspectives in order to construct knowledge. Accordingly, the researcher has approached this study from the constructivist worldview. He recognises that each participant has their own view on the event or phenomena being studied and the researcher will make interpretations and construct meaning and understanding based on these viewpoints (Arthur, Waring, Coe, & Hedges, 2012). The researcher uses these multiple realities that the participants share of an event to construct their own understanding of it (Merriam, 2010). He will rely on the views of participants through social interaction (Creswell, 2007) and use these views as data to develop concepts (Merriam, 2010).

The researcher is also observing the online behaviours of students to determine the type and level of engagement. The researcher will make interpretations based on the evidence seen to make the determinations.

This constructivist worldview of the understanding of how knowledge is created was then used in deciding on an appropriate research design.

3.4 Qualitative research

As the researcher is coming to this study from a constructivist worldview, a qualitative methodology has been chosen to undertake the research. The research is mainly focused on gathering participant perceptions, therefore the primary data collected will be descriptive, based around words rather than numbers (Bogdan & Biklen, 2003). This is a characteristic of qualitative research.

The researcher has come into this study to develop an understanding of what engages students in online learning and is therefore not aiming to prove or disprove a hypothesis (Bogdan & Biklen, 2003). It was recognised that although the research questions will delve into the various perceptions of the participants in the study, there is some quantitative data available also that can be used. Yin (2009) argues that quantitative data may be used within a qualitative case study approach as it may help explain the outcomes of the case study. In this study, some quantitative data is being used, where appropriate, to determine whether students have engaged behaviourally within a discussion forum activity.

3.5 Research design

In considering how to carry out the study, the dominant inductive, qualitative drive was taken into account. Consideration was given to what approach was best suited to gathering data that addresses the research questions.

Case study was deemed appropriate for this study as it allowed for a “detailed examination of one setting” (Bogdan & Biklen, 2007, p. 59). It allows exploration of a particular phenomenon of interest, in this case student engagement in online activities, within a bounded system (Creswell, 2013; Merriam, 2010). The bounded system or case—the unit that is being analysed that falls inside the boundary (Miles & Huberman,

1994)—in this instance is the Year 7-10 integrated studies programme which is delivered online in three classes at a New Zealand distance education school. The specifics of the case are discussed in section 3.5.1.

Yin (2009) identifies three main design types of case study, exploratory, explanatory and descriptive. Exploratory case studies can be used to "explore any phenomenon in the data which serves as a point of interest to the researcher" (Zainal, 2007, p. 3). In the same way that the researcher has a vested interest in the intrinsic case study, the exploratory case study also is of specific interest to the researcher. Explanatory case studies are useful for carrying out causal studies (Berg, 2009; Tellis, 1997) and descriptive case studies require the development of a descriptive theory and framework to follow for the study (Berg, 2009). Exploratory case study has been chosen for this research as the research questions are looking to explore whether different types and characteristics of online activities have an effect on student engagement.

Three main purposes of case study have been identified by Stake (1995). These are *intrinsic*, *instrumental* and *collective.* In an intrinsic case study, the researcher will often have a particular vested interest in a case that may not relate to other cases (Berg, 2009; Stake, 1995). The researcher in an instrumental case study has a particular issue to focus on. The researcher identifies a case to develop an understanding of that issue (Creswell, 2007 as cited in Berg, 2009). Collective (or multiple) case studies involve studying several instrumental cases to develop greater understanding of the issue (Berg, 2009). This research involves an instrumental case study that has a particular focus of student engagement online. The researcher also has a vested interest in the case as an employee of the unique school being studied, therefore the study is also intrinsic in nature.

The research design used to carry out this investigation is a qualitative instrumental and intrinsic, exploratory case study.

3.5.1 Description of the case

Integrated studies programme

The integrated studies programme offers teaching and learning in particular topics across the core curriculum areas in Years 7-10. The classes are of mixed levels and may contain students from any or all of school years 7-10. The school integrates as many of the core

curriculum areas as possible into each topic. Topics of study have included *Survivors*, where students learn about survival of people and animals, for example, looking at adaptations that animals have that help them to survive; *Ko Wai Au*[1], which is a topic where students learn about their identity and their heritage; and *Communications* where students learn about different ways of communicating with others. In some cases the topic may not cater for one or more curriculum areas. If this is the case a parallel programme of work is set up for students to ensure all curriculum areas are being covered during the period that learning surrounds that context. For example, if mathematics was unable to be integrated into the context, other general mathematics work will be assigned for students to complete, ensuring curriculum coverage.

Students in the school at Year 7-10 are able to choose whether their integrated programme of work is posted to them as a printed booklet, or made available online. This study focused only on the online students. At times, some paper-based learning materials in the form of printed booklets are sent to online students to complete if the learning materials are not yet available online or if there is no online alternative available. Students work independently, usually at home, with the supervision of a parent.

Online learning environment

The course is run in the Desire2Learn (D2L) LMS (Desire2Learn, 1999), which the school uses as their online environment. Within D2L a variety of different tools can be used. Instructional web pages can be created for students to learn from; teachers can post news and information, as well as assignments for students to work towards; and asynchronous discussions can be held within the forums. Other features include a dropbox for students to submit their assignments, an internal email system and a pager instant messaging system. Teachers use a variety of these tools to create learning experiences. Teachers may also ask their students to use a variety of other tools that are available online. Web 2.0 tools that encourage creativity, sharing, collaboration and discussion are used such as VoiceThread (http://voicethread.com/), Google Docs (http://docs.google.com/), Voki (http://www.voki.com/), Glogster (http://www.glogster.com/) and Prezi (http://prezi.com/).

[1] Ko Wai Au is a a Māori phrase meaning, "who am I?".

During the investigation period, which was the first five weeks of the third school term of 2012, students were given a range of activities to complete. These included creating wiki presentations, asynchronous discussions around the Olympic Games, art drawing activities, and writing activities which they submitted through the discussion forums.

Participants

The case includes students and teachers in the integrated studies programme across three different online classes. The classes themselves are independently managed by a teacher in the same way as a face-to-face classroom would be. Between the classes similar content or topics are covered, but individual teachers, and in some cases the students, can choose how the content is delivered and how work is completed. Similar activities are given to students in each class.

The three online classes that were chosen make up the entire online population for the integrated studies programme at the Year 7-10 level. The teachers of these classes volunteered their classes to be part of the study, although individual permission was required from each participant.

The following is a brief description giving the demographics of the participants. Potential participants included four teachers and 80 students. Of these, all four of the teachers and 10 students agreed to participate in the study. Two of the teachers were team-teaching one online class. Eighty per cent of the student participants were male. The student participants ranged in age between 11 and 15 years and each of school years 7-10 were represented. Ninety per cent of student participants identified as New Zealand European. Seventy per cent of the students had been learning online for at least one year. This last statistic shows that these students had some experience learning online and therefore may not be experiencing issues that can arise when starting out learning online. The students, while studying in a New Zealand distance education school were not all based in New Zealand. Some students were living overseas.

3.5.2 Ethics

Prior to the beginning of the project, approval was gained from the Massey University Human Ethics Committee (MUHEC) for the researcher to undertake the study. This section outlines the ethical considerations for the study.

Informed and voluntary consent

Gaining informed and voluntary consent of participants is an important ethical consideration when carrying out research. Informed and voluntary consent was gained in three stages. First, the researcher approached the school that was to be the focus of the study through a letter and information sheet (appendix 8.1) explaining the purpose of the study and requesting access to the school and the LMS to carry out research. Second, the four teachers of the identified online courses were approached by sending a letter and information sheet (appendix 8.2) via email inviting them to participate in the study and requesting access to their online courses. All four teachers completed and returned a consent form to show their willingness to participate (appendix 8.3).

The third stage was to approach potential student participants. MUHEC (2010) states that for children 15 years of age and under, consent must be gained from the child as well as from a parent, guardian or carer. Potential student participants were approached by placing an advertisement (appendix 8.4) in the online environment from which students could email the researcher for further information about the study (appendix 8.5) and decide, along with their parents or caregivers, whether they would like to participate. Completion and return of the consent form (appendix 8.6) demonstrated a willingness to participate.

Initially, there was a low uptake from students choosing to participate. This low uptake required the researcher to consider alternative ways to recruit participants. The researcher was given permission by the teachers to email the information sheets directly to students through the LMS's internal email system, as well as to send an instant message through the LMS's pager, instant messaging system. This more direct approach gave the student a more personal point of contact than only an email address and also gave all information about the study to the student for consideration.

Students interested in participating were asked to email the researcher on a private email address specifically set up for the research project. If a student replied to the researcher through the LMS's email or pager system, these messages are private between the student and the researcher. They could not be accessed by others in the school, but were known to the researcher.

Anonymity and confidentiality

In all research it is important to be able to protect the identity of the participants involved (Berg, 2009). The information sheets sent to participants outlined that confidentiality would be assured by the researcher. It was also expected that the participants involved would not discuss the project with others. All participants and the distance education school were assured that they would remain anonymous in any written documentation. Although the school and participants would remain anonymous in written documentation, anonymity was unable to be guaranteed due to there being only one distance education school in New Zealand. It is possible therefore, that people could guess the school and possibly the teachers involved. In the questionnaire, students were asked to give their name in order to compare what they shared in their questionnaire, their interview and the statistical data collected from the LMS (discussion forum comments, number of discussion posts and time spent online). This comparison would enable the researcher to triangulate the data and to provide a richer picture of individual participant engagement. Without their names, comparison would not be possible. Student participants were assured that the researcher would not share any information gained with their teachers. The teachers would not be told which students had chosen to participate. Within this document students are identified by a number, (e.g. Student 3). For more information see section 3.5.6.

Conflicts of interest

The researcher is a current employee of the school in which the study took place. This creates possible conflicts of interest with both the teacher and student participants. As the teacher in charge of overseeing e-learning throughout the school, the researcher has a vested interest in the outcome of the study. The researcher is also a colleague of the teacher participants involved in the study. As a result, the teachers may feel their teaching practices are being evaluated. The researcher made it clear through the information sheet to the teachers that the study was exploratory in nature and was not an evaluation of their teaching practices. All teacher participants were invited to participate in the study and chose to give their consent. Participants were also advised of their right to withdraw from the study at any time.

Although the researcher was not teaching any of the students involved in the study during the year the study was undertaken, the researcher may potentially teach the student

participants in future years. This was made clear to students and their caregivers in the information sheet. If, in the future, the student or caregiver perceive an issue with having the researcher as a teacher as a result of the study they were advised to discuss this with the appropriate people at the school.

Student participants may perceive a possible conflict of interest between themselves and their teachers teaching the online course due to there being a power relationship present. This conflict was minimised by not informing the teachers which students had chosen to participate in the study.

3.5.3 Instruments

Data collection instruments were chosen based on their appropriateness in collecting the required data. Student participants completed an online questionnaire. Student and teacher participants were then individually interviewed by the researcher. Further data about both students and teachers was collected from the discussion forum comments and the system statistics available in the LMS. Each of these instruments will be described further in this section.

At the beginning of the research period, students were sent a link to the online questionnaire by email for completion. Also during this time, interview bookings were made with the student and teacher participants who indicated they were willing to be interviewed. Interviews were carried out with the participants during the first three weeks of the research period. Statistical data and discussion forum comments from the LMS were collected at the end of the research period in order to capture all relevant data.

Questionnaire

Student participants were initially sent an online questionnaire through SurveyMonkey (http://www.surveymonkey.com/) for them to complete (appendices 8.7 and 8.8). The questionnaire was chosen as it is an efficient way to collect data and has been used successfully to investigate various areas in educational contexts (Check & Schutt, 2012). The questionnaire enabled the researcher to collect a range of information about the student and their perspectives of online student engagement in a relatively short period of time. This was considered important as due to the young age of participants, the researcher did not want to ask too much of them. The questions were carefully worded to

focus in on the aims of the study. They were checked for understanding by a child of a similar age to the student participants who was not a part of the study.

There were three sections in the questionnaire. The activities discussed in the third section differed depending on which online class the students were in, therefore a separate questionnaire was sent out to the students in each different class.

The first section of the questionnaire was used to gather demographic data on each student such as age, year level, ethnic group and length of time they have been learning online. This demographic information was collected to describe the case.

In the second section, students were asked some general questions about student engagement. The first question in this section asked how often they had done a range of online tasks or activities during the current school year. The range of online tasks and activities listed in question one were developed by the researcher after considering the types of questions asked in a range of existing well-established student engagement surveys including the National Survey of Student Engagement (NSSE) (Kuh, 2003), the Australasian Survey of Student Engagement (AUSSE) (Coates, 2008), and the Student Engagement Instrument – Elementary Version (Carter et al., 2012). Also considered was the fact that some of these student engagement surveys were developed for adults in a tertiary setting (NSSE and AUSSE), therefore the questions in the questionnaire were adapted to a level of language that was more suitable for the much younger age-group to ensure understanding. Students answered each part of the first question using a four point Likert scale ranging from “very often” to “never”. This style of question was adapted from NSSE as it allowed students to respond quickly and the resulting data would enable a clear picture to be seen across the group studied.

Also in the second section, students were asked what types of online activities they had been given during the year, which they preferred and why they preferred them. This was to explore student preferences in online activities.

The third section asked questions about their engagement in a particular activity they had just completed. This investigation into a specific activity was to further explore how students engaged in online activities. By asking about a specific, recent activity, the students have the opportunity to share a familiar online experience. The questions asked were the same, however the description of the activity was different due to the flexibility

given in the three classes meaning that not all the classes carried out the same online activity. Data from the questionnaires was then downloaded from SurveyMonkey for analysis.

Interviews

Interviews were conducted with both the student and teacher participants who agreed to be interviewed. All participants were to be interviewed as a part of the study unless they asked not to be. Three students (Students 2, 4 and 10) declined to be interviewed. Interviews were chosen as a focused way to collect data from participants (Yin, 2009).

A review of the literature helped to inform the development of interview questions about student engagement. Semi-structured interviews were conducted in order to keep the interview focused on the specified questions but to allow the researcher to ask further related questions if the responses allow or require (Berg, 2009). At the end of both the student and teacher interviews, the participants were given the opportunity to say anything else about online learning and online student engagement that they thought was important.

Due to the students being situated in various parts of the world, the student interviews were conducted over Skype. Teacher interviews were conducted face-to-face at the school office.

Both teacher and student interviews were recorded and transcribed verbatim in order to allow participants to check them for accuracy (Rodríguez, 2009) and for the purpose of analysis and the reporting of findings. It also increases the trustworthiness of the research. The transcript was sent to the participant via email for checking and a transcript release authority was signed by the participant (appendix 8.9). No participant asked for corrections to be made to the transcripts.

Questions in the student interviews (appendix 8.10) were focused on how the students perceived they engaged in the course and what they thought was the cause of this engagement or lack of engagement. Students were asked to describe their favourite activity they had been given as this would likely have a high level of engagement. They were also asked about their least favourite activity, whether they completed it and what they didn't like about it. Further questions were asked about what things helped to engage and motivate them when learning online. When discussing specific activities, the

questions ‘what did you learn?’ and ‘how did you learn it?’ were asked to help understand what type of engagement occurred during the activity, whether it be cognitive, behavioural or emotional engagement (see section 2.3.1).

In the teacher interviews (appendix 8.11), the focus was firstly on how teachers had set up their course at the beginning of the school year. This was seen as an important area to begin engaging students in online learning. Teachers were then asked to explain what online student engagement looks like to them, and also how they would know if a student was not engaged. The explanation given as to how they would know if a student was or was not engaged, was to establish an understanding of what each teacher believed student engagement was before they answered further questions. The researcher was able to use this understanding from the teachers’ perspective when analysing answers to the remaining questions in the interview in regards to engagement of students.

Learning environment

Discussion forum comments from both the student and teacher participants were also collected for analysis. These were collected to look for the types of student engagement in the activities, and were also used in triangulation of the data. The researcher looked for whether students’ discussion posts were relevant to the activity they were working on and whether they completed them in any depth or not. A framework for analysis of discussion forum data was developed by the researcher for the study (see Table 3.1) after consideration of the studies by Henri (1992) and Rourke (1999). For example, if a student wrote a simple one or two word response to an activity that most other students wrote a paragraph for, then that student may not have been engaged cognitively in that activity. The researcher was aware, however, that there could be multiple reasons why one response could be very different to another and each one was carefully considered to determine the type of engagement based on the framework.

Statistical data from the LMS was also collected. This data showed the number of discussion forum posts that were made for a certain activity. This quantitative data was used to measure behavioural engagement of students in the online activities.

Note: The discussion forum figures given in the findings indicated the total number of posts for *all* participants in the class, not only the research participants. This is because the LMS only gives summary statistics for discussion forums rather than student specific

information. It also includes the posts written by the teachers. This caused a limitation in the study as the researcher had to use whole class statistics in reporting these findings rather than only the research participants.

Table 3.1: Discussion forum analysis framework

Engagement type	Description	Indicators
Emotional engagement	Student discussion post demonstrates a sense of belonging, being comfortable online. Discussion post demonstrates that the student has identified or connected with the activity. Discussion post demonstrates the student has shown an interest towards the activity.	• Uses names of others (teachers/peers) • Asks for help • Interacts with others (questions, replies) • Uses emotive language, e.g. *Enjoyed, liked*.
Behavioural engagement	Student has participated in the activity. Discussion post is appropriate for the activity, i.e. Student is *on task*.	• Student completed part or all of what was required in the activity. • Post is *relevant* to the activity.
Low cognitive engagement	Discussion post demonstrates a low level of thinking by the student. In response to another post, the student has given enough thought to form an opinion but has not expressed the reasoning or explanation behind that opinion.	• Student has demonstrated some thought in posting, but has added nothing new to the discussion. • *I agree / I disagree* (with no explanation).
High cognitive engagement	Student demonstrated high-level thinking in discussion post. Student has explained reasoning/synthesised ideas into a clear description/explanation. Student has asked relevant questions to further their understanding. Student has demonstrated further exploration/research into the activity.	• Student shows a synthesis of ideas/deep thinking/explanation or clear description of thoughts/reasoning of opinion. • Extra source(s) cited (they have researched further). • Relevant questions asked to gain greater understanding of topic.

3.5.4 Data analysis

Each component of the data needs to be analysed appropriately. The methods used are described in the following sub-sections.

Qualitative analysis

The researcher followed the steps outlined by Creswell (2013) in analysis of qualitative data. The interview transcripts and the answers to the open-ended questions from the questionnaire were loaded into a web-based computer qualitative analysis program, *dedoose* (http://www.dedoose.com/). This program stores and manages the various files. Within dedoose, the researcher was able to read the transcripts and responses from participants and form codes to describe the case. Codes are labels given to text (in this case the interview transcripts) to form descriptions of what was said (Creswell, 2008). Codes were given to most of text in the interviews and were applied to sentences and paragraphs. Dedoose then brought these codes together for the researcher to see the various themes—similar codes brought together (Creswell, 2008)—that emerged in order to make interpretations of the data.

Quantitative analysis

In this study, the quantitative data was used for triangulation to help increase validity of the study. It was also used to measure engagement within the LMS. The statistical data that was gathered using the Likert scale questions in the questionnaire was used to help develop an understanding of what students had engaged with online and to what extent. Numbers of posts authored and read was collected from the asynchronous discussion forums as evidence of behavioural engagement. Due to the small number of participants from each class, analysis between groups was not possible.

3.5.5 Trustworthiness

The trustworthiness (Guba, 1981) of qualitative research needs to be shown throughout the research project to demonstrate academic rigor. Guba suggested four aspects of trustworthiness that need to be addressed in qualitative research. These are credibility, transferability, dependability and confirmability. Each of these four aspects will be discussed in this section in relation to this research project.

Credibility

When carrying out research from a constructivist worldview, the researcher recognises that there are multiple realities that are captured in the data through the participants. It is necessary for a researcher to be able to test the credibility of the findings (Guba, 1981)

by interpreting them appropriately in relation to the multiple realities of the participants (Krefting, 1991). Lincoln and Guba (1985) suggest that a researcher can demonstrate "credibility of the findings by having them approved by the constructors of the multiple realities being studied" (p. 296).

To ensure credibility in this study, the researcher has adopted well established research methods (Shenton, 2004) in regards to case study design and the use of the various instruments for gathering data such as the use of semi-structured interviews and questionnaires as has been described in this chapter. Triangulation has also been undertaken in this study to add credibility to the findings. Triangulation requires the researcher to use data from multiple sources to help make valid interpretations and reach conclusions (Creswell, 2013; Denzin, 1971). Guba (1981) suggests that information should come from at least two different sources before it is accepted. Within this study data has come from multiple sources including student and teacher interviews, questionnaires and online discussion forum data. Some quantitative data was also collected through the online system statistics. Where possible, data was triangulated from multiple sources. What participants stated in interviews was triangulated with questionnaire data or discussion forum data.

Transferability

Transferability relates to how the findings of the research context can be transferred into other contexts (Guba, 1981). Due to the situational uniqueness of qualitative studies such as this one, it is not always possible for the conclusions of a study to be wholly transferable (Krefting, 1991). It is also not possible for the researcher to know the context of the reader who is reading the findings therefore it is the responsibility of the reader to determine the transferability of the study (Lincoln & Guba, 1985). The researcher needs to give as much information about where the study is situated in order for the reader to make an informed decision in regards to its transferability (Lincoln & Guba, 1985). The case study setting and description is described in section 3.5.1 to give information towards the transferability of the research.

Dependability

For a study to have dependability the findings should have consistency, that is, the findings should be able to be repeated with the same or similar participants in the same

or similar context (Guba, 1981). The findings that have been described need to be consistent with the data collected. It is necessary for the researcher to ensure the exact methods of the study have been explained in order for another researcher to carry it out again (Krefting, 1991). The methods for this study have been given throughout section 3.5.

Confirmability

Guba (1981) describes confirmability as being able to establish that the findings of the research are based on the participants rather than on the researcher's interests and biases, that is, they are confirmable. Clear explanations of the data collected is required. Confirmability requires the researcher to acknowledge any interests in the outcomes of the study (Shenton, 2004). The researcher acknowledges his personal interests in the study as an employee of the school in which the research took place. Triangulation, as described earlier in this section will help to minimise bias from the researcher as it requires data to be collected from multiple sources.

3.5.6 Explanation of codes

Throughout the results chapter there is a variety of quotes from participant interviews or from discussion forums. These all have codes after them to identify where they came from. These codes are explained in Table 3.2.

Table 3.2: Description of identification codes used

Code	Description
S1-S10 or Student 1-Student 10	Student codes: Student 1, Student 2, Student 3, … etc.
T1-T4 or Teacher 1-Teacher 4	Teacher codes: Teacher 1, Teacher 2, Teacher 3 and Teacher 4
C1-C3	Class codes: Class 1, Class 2 or Class 3. The class code is only used when identifying a specific discussion
Int	Quote from an interview
Q followed by a number	This is the question number from the interview schedule
Disc followed by a number	Quote come from a specific discussion forum

For example, *T2IntQ1* means that the quote came from the interview with Teacher 2, question 1.

S1C3Disc3 means that the quote comes from Student 1 in class 3, discussion 3.

3.6 Conclusion

The constructivist worldview of the researcher guided the design of this qualitative study. Qualitative research methodology was considered most appropriate as the data to be collected was primarily based around descriptions given by participants through the questionnaire and interviews. Some quantitative data was also collected to determine behavioural engagement of students. Ethical considerations were taken into account to help ensure the anonymity of all participants and the school involved.

The next chapter describes the findings collected in the case study.

4 Results

This chapter reports on the findings of each of the three research questions. First, it outlines the activities that the students identified they had been given, indicating which of these activities they prefer. The student interview data was used to expand on the data collected in the questionnaire. Second, the perceptions of the teachers are considered as to what engages students in an online course and the activities they give to the students. Finally, the chapter looks at what encourages student engagement in online activities based on what the students have actually done online.

4.1 Research Question 1

What types of activities do students prefer in online courses and what are the reasons behind their preferences?

The findings of this research focused specifically on the activities, or parts of activities that are submitted online within the LMS. It should be noted however, that there were activities that required students to complete some or all of the activity offline, without a computer. An example of this was an art activity in which a student was expected to draw with a pencil on paper. This research focused on the parts of the activities that were completed online within the LMS, known as the Online Teaching and Learning Environment (OTLE).

Within the LMS, the students in the online classes did a lot of their learning through the asynchronous discussion forums. The forums were used not only for discussing but also to ask and answer questions and to submit work by uploading a file as an attachment to their discussion comment. Also within the LMS, learning material was found in the content tool, made up of webpages that contained, for example, text, images, video clips, sound clips or animations. The students were given online quizzes to attempt within the LMS or asked to submit assignments into the system assignment dropbox by uploading files for teachers to give feedback on. Submitting a file by attachment to a discussion post made it available to the other students in the class to view. Submissions through the dropbox were private between the student and teacher.

External to the LMS, but still online, students were asked to work in a range of web-based sites such as Google Docs (http://docs.google.com), wiki's (such as Wikispaces,

www.wikispaces.com), VoiceThread (www.voicethread.com) or Voki (www.voki.com). In these types of activities, the LMS was used only to submit the finished product, for example, a link to the site in a dropbox or a discussion forum.

4.1.1 Activities given online

In order to gain an understanding of what the students had been asked to do online, they were asked in the questionnaire to select all of the different types of online activity they had been given.

All of the students (n=10) indicated they had been asked to participate in asynchronous discussions, upload files into the dropbox and work on activities outside of the LMS. The student use of the discussion forums was confirmed by the LMS data. Nine of the surveyed students identified a quiz as an activity they had been asked to do online. Both the submission via dropbox and the activity outside of the LMS could be carried out either individually or in a group.

All ten of the students indicated that they had been given individual activities to work on and seven indicated they had also been given group activities.

4.1.2 Preferred activities

Students were asked to identify the three types of online activity they prefer. They ranked them in order of preference. Group and individual activities were included in the selection.

The data collected from this question was examined in three ways and is shown in Figure 4.1. Due to the low number of student participants (n=10) there was little difference between the preferred activities students gave. However, activity outside of the LMS and discussions were the most preferred when combining the students' first and second choices. There was no difference in preference in either the first or second choices given by students between preferring group or individual activities. Combining the results of all three choices, Figure 4.1 shows that overall, the online activity outside of the LMS was the most preferred type of activity by this group of students. Quizzes were the second most preferred type of activity overall followed by discussions and dropbox. Group activities were preferred over individual activities when combing all three choices.

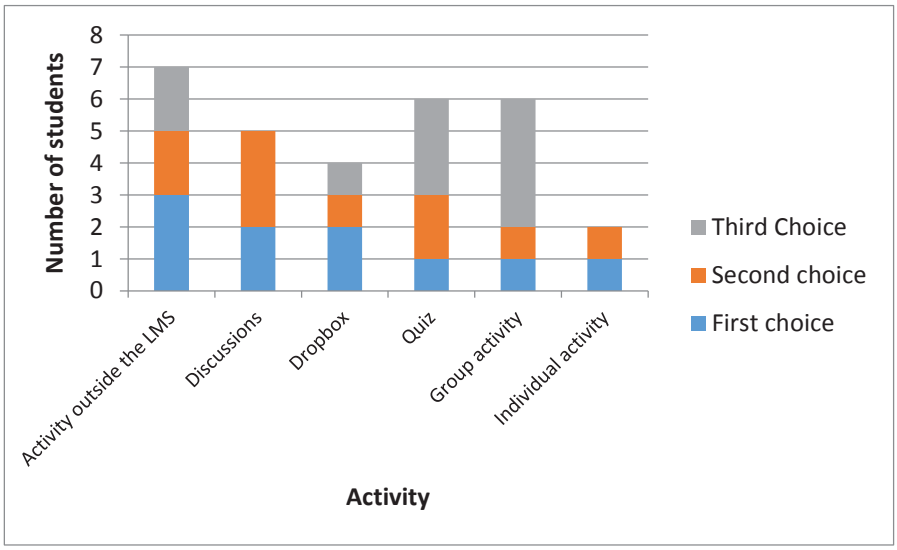

Figure 4.1: Student preferences of activity type showing each of the three choices students made

Table 4.1 shows that there appears to be some agreement between the first choice preferences students gave in the questionnaire and what each individual discussed as a favourite activity in the interviews. Out of the three students that stated in the questionnaire that they prefer online activities outside of the LMS as their first choice (S3, S4 and S8), two of them (S3 and S8) described an activity using Web 2.0 tools in the interview as their favourite activity they had been given. Student 4 declined to be interviewed.

Student 3 talked about a Web 2.0 tool, Voki (www.voki.com), an animated character that will speak text.

> *"One of the, my favourite, um, online activities is where we have to learn to use different types of gadgets on the computer…. Mainly on the internet there's cool things like Voki." (S3IntQ1).*

Student 8's favourite activity was one in which they had to draw a shark following an instructional video on YouTube (www.youtube.com) and then scan/photograph their drawing and upload it into the discussion forum. She stated that interest in doing art was why she liked doing the activity,

> *"what made me want to do it was I like doing art" (S8IntQ1a).*

The fact that the activity was mostly carried out outside of the LMS may not have affected her preference in this case as her reason appears more closely related to the curriculum area of art than being outside of the LMS.

Table 4.1: Comparison between student 'favourite activity' from their interviews with their 'preferred activities' from the questionnaire

Student	Favourite activity (from interview)	Preference 1st choice (from questionnaire)	Preference 2nd choice (from questionnaire)
S1 (C3)	Creating wiki's on own.	LMS dropbox	Wikispaces (online activity outside of the LMS)
S2 (C2)	*Not interviewed*	Individual assignment	LMS dropbox
S3 (C1)	Use Web 2.0 tools, e.g. Voki.	Online activity outside of the LMS	Discussions
S4 (C1)	*Not interviewed*	Online activity outside of the LMS	Group activity
S5 (C1)	Discussion and using Prezi (Web 2.0 tool) in a group.	Group activity	Discussions
S6 (C1)	Individual design activity.	Individual assignments	Quiz
S7 (C1)	Discussions and individual activity.	Discussions	Individual activity
S8 (C1)	Individual activity, using video outside the LMS.	Online activity outside of the LMS.	Discussions
S9 (C1)	Discussions and individual activity.	Discussions	Quiz
S10 (C3)	*Not interviewed*	Quiz	Online activity outside of the LMS.

Two students (S1 and S5) talked about online activities outside of the LMS in relation to the favourite activity question in their interviews. However, neither of these students identified this activity type as their first, preferred choice, although Student 1 did identify it as a second choice. Student 1 discussed an activity where he put together a wiki on a particular topic.

Discussions were the second most preferred activity when combining first and second choices (see Figure 4.1). From the interviews, it appears that discussions were often a part of an activity rather than the entire activity. Students would sometimes need to create a document, for example, and share it within the discussion forum and make a comment on what the other students had done. Table 4.1 shows that two students (S7 and S9) indicated discussions as a first choice and mentioned this in response to the favourite activity interview question.

Student 7 initially mentioned discussions as a favourite activity. When asked to give an example, Student 7 talked about other parts of the activity (listening to an audio recording of The Christmas Carol, reading the story, and watching a movie about it) before stating

what they had to comment on in the discussion forum (the pros and cons). This shows that the discussions were sometimes only part of the activity.

> *"…probably the discussions. It's, ah, an easier way to keep in contact with everyone beside you using Skype…. We had to listen to the story and read it and see a movie about it then give our opinion about each three of them and say what the basically the pros and cons about each of them different renditions of them." (S7IntQ1)*

Although Student 9 indicated in the questionnaire that he prefers discussion activities, he described in his interview an activity where students had to create an ID card in order to get to know each other. These ID cards were shared within the discussion forum however, and Student 9 did discuss getting to know other students through chatting with them in the discussion forum.

> *"I commented on one, ah, ID card they replied and told me a bit about, ah, what ah, where they lived and what they'd put on the ID card and just a bit more depth into ah their cards that they had written." (S9IntQ1)*

Three other students (S3, S5 and S8) picked discussions as a second choice (Table 4.1) with Student 5 also talking favourably about discussions in their interview, highlighting being able to talk with and ask questions of other students.

> *"I think my favourite online activity is the discussion because you can communicate and talk with other students. And say if you're working on a project and you have like some trouble doing it you can just ask questions about what I can do to improve on it." (S5IntQ1)*

4.1.3 Reasons for preferring activities

Table 4.2 displays the reasons each student gave in the questionnaire for choosing their first preferred activity. The total number of students that chose each reason is shown in the *Total* row across the bottom, regardless of which type of activity they chose. Students were able to give multiple reasons for preferring an activity.

The data in Table 4.2 shows that different students had different reasons for preferring a particular activity. For example, for the three students that chose online activity outside of LMS as their preference (S3, S4 and S8), four of the ten reasons given were shared by at least two of them. These were, 'easy', 'makes me think', 'lets me work my own way'

Table 4.2: Student reasons for their first activity preferences

Student	Preference 1st choice (from questionnaire)	Reasons									
		Easy	*Quick to do*	*Challenging*	*Makes me think*	*Allows me to work in a group*	*Allows me to work on my own*	*Allows me to discuss with others*	*Lets me work my own way*	*Allows me to be creative*	*Other*
S1	LMS dropbox		X				X		X		
S2	Individual assignment						X				
S3	Online activity outside of the LMS								X	X	X - Fun
S4	Online activity outside of the LMS	X		X	X	X	X		X	X	
S5	Group activity			X	X	X		X		X	
S6	Individual assignments									X	
S7	Discussions		X	X	X	X	X	X		X	
S8	Online activity outside of the LMS.	X	X		X			X		X	
S9	Discussions							X			
S10	Quiz		X		X					X	
Total		***2***	***4***	***3***	***5***	***3***	***4***	***4***	***3***	***7***	***1***

and ‘allows me to be creative’. ‘Allows me to be creative’ was the only reason shared by all three of the students.

A greater number of student participants may have resulted in a clearer relationship becoming evident between preferred activity type and the reason for preferring it. Due to the small sample size, this section focuses only on the reasons students prefer an activity rather than looking at specific activity types. This will help determine what was important to these students in an activity.

Creativity

The ability to be creative in an activity was important for the majority (7 out of 10 students) of the sample group. Creativity was not specifically mentioned in the student interviews, however a number of students described activities that allowed creativity. For example: Student 1 described creating wikis (S1IntQ1); Student 3 discussed creating talking avatars using Voki (S3IntQ1); Student 5 created a presentation in Prezi (S5IntQ1); Student 6 talked about designing a tank for an octopus (S6IntQ1); and Student 8 described drawing a shark (S8IntQ1).

During the research period there were not a great number of activities that explicitly required students to be creative. A discussion within Class 1 that encouraged creativity was where students were asked to draw a shark. This discussion had the highest number of discussion posts authored for the entire class, 78 posts. A similar activity where students were asked to draw an owl had the third equal highest number of posts authored, 49, for the class. A discussion where students were asked to share a creative writing piece also had 49 posts authored. This suggests that what the students have said in regards to creativity being an important factor as to why they prefer certain activities is also seen in the system statistics.

Class 2 also had a creative writing activity during the time the research was carried out. This had the greatest number of posts in this class, of 45. The second highest discussion forum based activity for this class was a mind mapping exercise with 40 posts. Mind mapping allows for some creativity along with making connections with concepts.

Class 3 did not have any specifically creative activities such as was seen within Class 1 or 2. They did have an ongoing wiki activity which allows some creativity, however data pertaining to this was unable to be captured as it was outside of the LMS.

Within this study, there is some agreement between students preferring creative activities and what is seen within the LMS.

Encourages thinking

The second most common reason given by students for their choice of preferred activity was ‘makes me think’. This suggests that students have a desire to be cognitively engaged. An activity that is challenging is also likely to require students to think. Three students (S4, S5 and S7) indicated ‘challenging’ as a reason they chose their preferred activity. These same three students all also chose ‘makes me think’.

When asked in the interviews about whether they preferred activities that were challenging, more students preferred at least some challenge over an activity being easy.

> *“I prefer it to be something more or less in between…. A little bit more to the challenging side.” (S3IntQ1a)*

> *“Interviewer: Right. Do you like to be challenged?*
> *S8: Generally yes, but sometimes, I, not really.*
> *Interviewer: Right what, so in an online activity where your teacher’s given you something to do would you prefer it was a little bit challenging or prefer it a bit easier?*
> *S8: I prefer it a bit challenging.” (S8IntQ1a)*

> *“If something is easy I quite like to learn something in it, ah, and sometimes after a bit of easy work it’s nice to have a challenge as well.” (S9IntQ1a)*

Student 6 went further than just stating they would prefer it more challenging by suggesting that if it’s challenging it would make them think about it.

> *“Well it would be better if they were a little bit challenging because then you would actually have to use your brain and you wouldn’t just skip over it.” (S6IntQ1a)*

Collaboration

Some students also saw the advantage of collaboration for stimulating more ideas and thought as Student 6 described:

"…it was quite fun to work alone, but if I had to, I'd prefer to work in a group 'cos then we could put more brain power into, um, the project that we're on." (S6IntQ1a)

This is supported by the questionnaire data shown in Table 4.2 for the next highest reason for preferred activity choice of 'allows me to discuss with others'. Four students chose this reason. Two of these students also selected 'allows me to work in a group'. As both of these reasons focus on group work, they are being looked at together.

The idea of extra support from students was raised by Student 5 as a reason they preferred to work in a group rather than on their own,

"I like group activities better than individual ones because, as I said before, if you get stuck you can just ask questions and get help." (S5IntQ1a)

Even for those students who are happy to work in a group situation, not all reported positive experiences. Student 3 raised some issues of stress caused by lack of communication and the difficulty connecting and collaborating with others due to differences in time zones:

"I really like, enjoy working with other people but it can sometimes, if the other person isn't good at communicating, it can be quite stressful." (S3IntQ1a)

"…the main thing about learning online is the time difference. Especially when you're working in groups the time difference can be um, quite, um, annoying." (S3IntQ4)

Not everyone wants to work in groups, however. Student 1 stated that they prefer "*activities that I do on my own"* (S1IntQ1a).

Table 4.2 shows that four students selected 'allows me to work on my own' as a reason for their preferred activity choice. It needs to be noted though, that two of the four students also selected 'allows me to work in a group'. It is a possibility that these students had completed activities of the type selected as their first choice both as an individual and within a group and it is likely that the students preferred aspects of both types. Six of the seven students also described a favourite activity in their interview that was completed individually rather than collaboratively. Student 5 is the only one that described a collaborative activity during his interview (Table 4.1).

Quick to do

'Quick to do' was indicated by four students in the questionnaire as the reason they chose their preferred activity. Looking at the activities that are likely to have taken the least amount of time, there is little evidence that students were more likely to engage in these activities as opposed to those that took much longer.

There are no statistics indicating how long students spent on the discussion activities. One activity that appears as if it should take a short amount of time where students only had to state the country they chose to create an Olympic wiki on, why they chose it, and share the link to their wiki, had a very low response (C3Disc3). None of the students in the study contributed to the discussion. There were eight discussion posts in total and Teacher 4 wrote half of them.

Although there were some activities that could be perceived either by a teacher, a student, or the researcher as quick to do, there was insufficient data to determine if these activities were actually quick to do.

One of the activities that would likely to have not been quick to complete was where students had to write about an Olympic or sporting event as if they were a part of it. This activity had a high number of posts written by students, indicating behavioural engagement. In Class 1, 49 posts in total were written, 33 were from students (C1Disc6). In Class 2, 45 posts were written in total, 33 were from students (C2Disc5). Activities that are quick to do might be a preference for students, however this does not necessarily mean they are more engaging than other activities.

Student 1 talked about wanting activities that he doesn't enjoy or have much interest in to be quick to do. When questioned about interest in an activity Student 1 said that if he's not so interested in an activity he hopes he can complete it quickly in order to move on.

> *"I just do them [less interesting activities] and hopefully get through them pretty quickly." (S1IntQ6).*

Fun

Fun was also suggested by a student as a reason they preferred a certain type of activity (see Table 4.2). Although only mentioned by one student in the questionnaire, several of

them mentioned enjoyment or fun as important to help them learn online, or they mentioned that they had fun doing certain activities.

> *"When it's fun it makes it impossible to say, 'I don't want to do this, it's too hard.'" (S9IntQ3).*

> *"If you don't enjoy it, it's, you don't really want to do it so it's kind of just a thing that you have to do." (S8IntQ3)*

> *"Well for a start because it's quite fun ah, making your own little avatar to talk" (S3IntQ1).*

One student actually mentioned that he had some fun doing the activity he described as his least preferred which appears contradictory,

> *"yea, it was pretty fun. Ah, I enjoyed the ah, writing about the different experiences that, ah, Scrooge went through. It was pretty fun." (S6IntQ2)*

This student had described how he doesn't usually enjoy writing but he was able to listen to some audio files of the story first before writing and found that enjoyable,

> *"I liked how you could listen to the audio" (S6IntQ2).*

So although it was a type of activity he wouldn't usually enjoy, certain parts of the activity made it more manageable and enjoyable for him.

Audience

Only one student commented that sharing what they had done was a reason they liked the activity they described in the interview. Student 1 stated that he enjoyed the wiki activity he was given "*Cos I can share my stuff on wiki"* (S1IntQ1a). This suggests that having an audience appears to be important to Student 1.

4.2 Research Question 2

What do teachers perceive engages students in online courses and why?

In order to understand the teacher perceptions of what engages students online, it was first necessary to gain an understanding of what the teachers consider online student engagement looks like. To do this, the teachers in the study were only asked about student

engagement as a whole concept. They were not required to describe it in its various parts of emotional, behavioural and cognitive engagement.

4.2.1 Teacher definition of online student engagement

The teachers appeared to focus primarily on behavioural engagement when describing what online student engagement looked like to them. They identified students taking part in activities and students interacting with each other and the teacher. All the teachers commented specifically on seeing regular communication as a sign of student engagement.

Teachers 1 and 2 discussed student engagement as regular contact with the student,

> *"…regular contact and daily interaction, ah, daily touching base. A little comment here and there a Skype message." (T1IntQ3)*

> *"They'll contact me two, three or four times during the week, sometimes it's just to say hello and share something with me like, "oh it's been raining for three days" or "did you hear the joke about…" or something like that. So I know that they're, they're comfortable in their interactions with me and they initiate something with me" (T2IntQ3).*

The personal contact that Teacher 2 describes, although not activity focused, could be seen as an important investment in the emotional engagement of the student. It helps build a sense of belonging for the student allowing them to feel comfortable to participate in the online class.

Teachers 2 and 3 talked about completion of tasks when describing what student engagement looks like. Their descriptions could be interpreted as describing behavioural engagement.

> *"…a kid who is engaged, they complete the tasks each week." (T2IntQ3)*

> *"Seeing them take part in the discussions …. Actually seeing some work in the dropbox from, from them if that's what you've ask them to do." (T3IntQ3)*

Interaction, both between the student and teacher or amongst students was described by Teachers 3 and 4.

"Discussion about, you know, books they've read and then movies they've seen and talking about those type of thing." (T3IntQ3)

"Well, it's the responses they give, and are they producing the work that I set for them, that is there for them? And are they doing anything else apart from that, as well, because often they'll email me or Skype and ask about other things and well do other things as well." (T4IntQ3)

4.2.2 Perceptions of reasons students engage

Teachers were asked to discuss an activity which they perceived had a high level of engagement. They identified several reasons as to why they believed the activity engaged students highly.

Activities outside of the learning management system

All of the teachers identified that students engaged highly in activities that were carried out externally from the LMS, usually using Web 2.0 tools. The teachers believed these activities were student-centred, giving student ownership as well as some control and choice over the activity.

Student ownership

Interviewer: "…what do you think were the causes of the high level of engagement in that activity?"

T2: "Their ownership of it." (T2IntQ5a).

Control

"where they've got more control over how they can display content… you do seem to see more involvement" (T3IntQ5a).

Choice

Interviewer: "Was there anything else in that activity… you think helped with that higher level of engagement?"

T3: "…I think there was the choice. There was that, yea, the choice of activities" (T3IntQ5a).

"students did it on Glogster and some did it on PowerPoint and others did, printed them out. It was a, you know, variety of different ways" (T4IntQ5a)

The simplicity of using Web 2.0 tools was suggested by Teacher 2 as something that leads to high engagement. This was expanded on by Teacher 3 who compared the use of wikis with the LMS, suggesting that the system may have a negative impact on student engagement.

"[the wiki is] easy for them to contribute their thoughts to" (T2IntQ5a)

"…you do seem to see more involvement [using wikis] and they are able to see what each other are doing a bit easier than the cumbersomeness of OTLE" (T3IntQ5a).

Familiarity, through prior knowledge, was also suggested by Teacher 1 as a reason that Web 2.0 tools were engaging to students,

"they'd seen VoiceThread prior so they knew how it worked" (T1IntQ5a).

Feedback

Peer and teacher feedback along with praise for students was suggested by two teachers as helping to increase engagement in an activity,

"a big part of it being that peer assessment. When they, their peers are coming in and, and making nice constructive comments and, and working towards that praise and, and for them it's lifting their level" (T1IntQ5a).

"I think the more that you can, um, praise and comment on what certain students have done … praising that student but giving other students the idea of some other ways that they might be able to do something" T3IntQ5a).

Engagement of teachers

Activities that the teachers identified resulted in a low level of student engagement were also discussed in the teacher interviews in order to ascertain whether there are some specific activities or practices that discourage students to engage. A range of reasons was suggested as to why students exhibited low engagement in activities.

Teachers 1 and 2 both identified situations where they did not actively engage in the activities themselves and this resulted in low student engagement. The teachers did not

engage enough with the activities and also did not encourage students to complete them. Teacher 1 specifically identified his personal lack of "buy in" or engagement in the activity he had given his students,

> *"Some things you know… I don't buy into… It's something that's been developed [by someone else] and I put it out there" (T1IntQ6a).*

> *"what made it not work was, I guess, my enthusiasm. I didn't drive it with some reminders" (T1IntQ6a).*

Teacher 2 felt that they did not step in soon enough to encourage engagement from the students to make it worthwhile. This suggests that the teacher might not have been fully engaged in the activity also,

> *"I probably drew it [the activity] out too long and then didn't really want to bring them [the students] back to it" (T2IntQ6a).*

This idea of a lack of teacher engagement as affecting student engagement was reinforced by Teacher 4 who stated,

> *"When I'm having a slow time, they [the students] have a slow time" (T4IntQ8).*

This "slow time" or lack of "buy in" suggests that teachers have a role to play in helping students to engage.

Anonymity and privacy

Teachers 2, 3 and 4 all discussed a similar activity using the Web 2.0 tool, VoiceThread (http://voicethread.com), that resulted in a low level of student engagement. Both Teachers 3 and 4 indicated that a reason for the low engagement may have been students having a lack of anonymity when being asked to video record themselves. Teacher 3 stated,

> *"I don't know whether it was because they are more comfortable in having, in some ways a little bit of anonymity in an online classroom" (T3IntQ6).*

Teacher 4 highlighted the resistance from students to making the recording even though they had engaged in other aspects of the activity.

"There was this huge resistance to recording…. They were quite happy writing the stories and doing the story board" (T4IntQ6a).

As students do not have anonymity when writing discussion posts, it could be that students actually like to have some sense of privacy by remaining hidden behind their words. By asking students to video themselves a reduction of some of the students' privacy and anonymity occurs. Writing may also give students more time to consider what they want to say, whereas talking gives no opportunity to revise what they are presenting.

Degree of difficulty

The final area that Teacher 2 raised about the VoiceThread task was that the students found accomplishing the task difficult and therefore did not engage highly,

"one of the things may be that they find questioning by audio or video quite hard" (T2IntQ6a).

4.2.3 Fostering engagement

Communication

When asked what they did to foster engagement in their courses there was some consistency amongst all the teachers. They all said that making regular, personal contact with students, usually via Skype or email was a key to building engagement.

Teacher 2 continued on to suggest that building relationships is a key to engaging students,

"try to get to know the kids a little bit. Know a bit of their background so that you can have the non-work related conversations with them. Um, try to talk to them regularly on a, what do you call it, personal level." (T2IntQ4)

As a part of building relationships, appealing to student interests was an area that Teacher 2 believed helped to foster engagement,

"Um, try and appeal to their special interests….show that special interest to the class in a way so that others can kind of acknowledge it and maybe thereby encourage them" (T2IntQ4).

The development of teacher-student relationships through communicating outside of the LMS on the phone or using tools such as Skype appeared to be most important.

Teacher 2 described how, at the beginning of the year they communicated through the discussion forum to build relationships in the class and develop social presence,

> *"I ask them to introduce themselves and, given that a lot of them are repeat students, we try, I try to come up with something a little bit different. So, um, 'tell us about something we don't know about you'." (T2IntQ1)*

Teacher 2 also discussed that the communication and encouragement she gives over the phone takes up a lot of her time, particularly with new students. This is echoed by other teachers.

> *"A lot of time on the phone. I'm on Skype just talking to them, talking about um, how we want the course to run. It seems to be really important to show good practice at the start of the year. Even as we have kids coming in during the year, they seem to pick it up really quickly what we do and how we do it." (T2IntQ1)*

> *Interviewer: "You mentioned contact. Is that just particularly at the beginning of the year?"*
>
> *T4: "No. It's every week, every day, you know, there's always someone on Skype messages… asking can I talk to them. Um, and emails. I send out emails once a week to everyone." (T4IntQ4)*

The amount of time it takes to develop social presence and relationships amongst the class was mentioned by Teacher 2 in regards to all the communications with individual students but she can see the value in making the commitment to develop relationships in her class,

> *"…it's a big time commitment for me, but, but it's worth it." (T2IntQ1)*

Relationships and community

From the beginning of the year as new students come into the class, the teachers of the three online classes work on engaging students in their classes through building relationships. The teachers explained that building relationships with their students was very important in fostering engagement online. When asked about how the culture of their online course is developed throughout the year, Teacher 1 talked about building the

confidence of the students, showing an interest in them and described this as building relationships,

> *"…building up their confidence…. That's kids – you've got to show an interest that'll get them, that they'll show an interest [in], and they'll share stuff with you. And, ah, it's building up that relationship". (T1IntQ2)*

Teacher 2 commented that one of the things she has done to foster engagement in her online class is to try to get to know the kids on a more personal level,

> *"…try to get to know the kids a little bit. Know a bit of their background so that you can have the non-work related conversations with them. Um, try to talk to them regularly on a, what do you call it, personal level. Um, try and appeal to their special interests, show, try to show that special interest to the class in a way so that others can kind of acknowledge it and maybe thereby encourage them." (T2IntQ4)*

Support

Closely related to relationships and community is the need for teachers to give support to their students. Both Teacher 2 and Teacher 3 talked about supporting the students one-on-one to help build confidence and skills,

> *"Often working behind the scenes with the, with the student, particularly if I think they're not confident." (T2IntQ4).*

> *"When I've got new students, just trying to help them with the navigation side of thing, hopefully have a Skype session with them because I do find that's one of the, the best ways that I've found to get them um being able to see where different things are" (T3IntQ4).*

Encouraging interaction

All four teachers also suggested that the practice of *encouraging interaction* amongst students was important to help increase student engagement.

> *"Yea… I'm working on that [encouraging engagement]… It's a big one reminding kids to go in there and, you know, make a comment." (T1IntQ7)*

Teacher 3 explained how they sometimes do some "behind the scenes" work to encourage a student to comment on another students work,

> *"…sometimes we might have had a student that's put something in as a discussion that doesn't seem to have had any response so we might actually do some behind the scenes stuff to try and get some of that [interaction], um, coming across." (T3IntQ7)*

Teacher 2 illustrated the importance of interaction with a story of a boy who had been working in this class for three years but had not gotten to know any of his classmates,

> *"It's been my goal and he knows it, to get him to know the other kids better. … Well, um, the result is he is interacting more with the other kids. He is talking to them a lot on Skype, um, you know, directly and with other students. I recently asked his mum if they ever talk about school work in any of these conversations and she said, "no", however when I asked him he said, "yes we do sometimes, but then we usually go off on our own conversations". And when I say conversations they're always typed they do not ring each other.…So here is a kid who now is going in chatting with others and appearing, it's quite obvious, that he knows the other kids more and he's,* ***he's much more engaged*** *in the tasks that we are doing as a result of it." (T2IntQ7)*

Although the interactions started off mostly outside of the LMS, through Skype, he also began to interact with the students in the online class and his overall engagement increased.

> *"I'm now am finding that he's finding the tasks. He's completing them. He's feeding back to other kids. He's much more engaged too. So it, it's really important to see him going in and saying to you know, "[student] I really like your shark drawing". Um, cos previously he would have opted out of that unless it was absolutely compulsory. And he's saying things like, "that's much better than the drawing you did previously". So he's now remembering things other kids have done. He's using them as a referral point so I'm kind of assuming that he's doing that more for his own learning too. He's feeling more engaged with his own learning 'cos he talks about it more. He's more knowledgeable about it." (T2IntQ7)*

Teacher 4 implied that interaction was useful in engaging students but it's not always easy to get interaction occurring in the class,

"Sometimes they're very good at giving feedback to others. Sometimes it's hard. But at the moment, actually, this has been quite successful." (T4IntQ7)

As the encouragement given to students from their teachers to interact or engage with their peers occurred outside of the LMS or in the private messaging or email functions, further data on the "behind the scenes" type student-teacher interaction was unavailable.

Feedback

Related to student-teacher interaction is feedback. There was a suggestion from Teacher 2 that in their view some feedback helps but it's not always used or even recognised by the student. This was illustrated by the following example:

"I just had a conversation with a Year Ten student who's, you know, going to be, who's thinking about NCEA already at this time of her Year Ten year and I said to her, 'I give you a lot of feedback, don't I?' and she said, 'Oh yes', and I said, so I had to real, actually ask her what it was and where … 'Oh you mean the comments you give me?'. 'Yes. Do you do you find those comments useful?' 'Oh yes'." (T2IntQ7).

Two teachers commented that feedback had a big effect on engagement but didn't explain further, and one teacher believed that quick feedback was important, however again there was no reason given as to why.

Scaffolding

The term 'scaffolding' was used by teachers in a couple of different ways. First it was used to discuss the breaking down of larger activities into smaller portions for students to build on. Second it was used to describe providing structure and support to a student when they were finding an activity difficult. Scaffolding was not something the teachers appeared to particularly focus on to support their whole online class. Teacher 3 implied that she used scaffolding more on an individual basis as required,

"…if it's a matter of them needing more scaffolding you can do that by a Skype session or an email or something like that to break it down further than perhaps what another student might need." (T3IntQ7)

Teacher 2 also described scaffolding used on an individual basis,

"…scaffolding's possibly done more on a one to one basis. If a student doesn't appear to be doing something I'll say, 'oh how're you getting on with this?' … And then we do some one on one [support]." (T2IntQ7)

Student choice

Teachers were asked about the effect that giving choices to students had on student engagement. All the teachers thought that giving students choice as a part of their learning activities was important, but there was no specific link made by any teacher to any effect on student engagement. Teacher 4 discussed that although students do like to have some choices, they still need guidelines around the activities they are asked to do or simply be told what to do. She suggested that the younger students in Years 7 and 8 need extra guidance,

"But then, like with our Olympic games one, you know, it was build a, create your own wiki space and stuff, and but then it was, they still needed you, well this is what you need to put in, you need to put this, you need to put this, you need… I think it's this, because they're maybe just [year] seven's and eight's, that they still need a lot, a lot of um guidelines. They're, they're much happier at this stage to be told what to do." (T4IntQ7)

Peer pressure

Peer pressure was suggested by two of the teachers as encouraging students to engage. The teachers would set up activities where students would need to work together or could see what each other was doing or had accomplished. The teachers believed that this put some pressure on the students to participate and engage in the activity,

"you get kids working together, you know. So it's put the pressure on them to … work in teams, so work in little small groups to create, um, create something within an activity. So it's getting, buying into, not letting down their, their classmates" (T1IntQ4).

"We also have a check list in Google Docs that has all the kids named…. And they're supposed to fill in when they've completed an activity. So that's it's a bit like a chart in a classroom…. You know, that they can see what others are doing um and it might be a bit of a wakeup call to them or it might not" (T3IntQ4).

Other ways to foster engagement

The teachers mentioned some other things they do to build engagement in their classes but these were not common amongst the teachers. These included giving students manageable tasks,

> *"…giving them, um, tasks, for want of a better word, that, that are manageable. Manageable for them to do. Things that they can do, and things that they can do easily to start with and then to sort of build to" (T4IntQ4).*

Setting up a peer support system for students to support each other,

> *"Sometimes I set up a buddy system" (T2IntQ4).*

Ensuring there were a variety of different activities for students to work on,

> *"…the class has got this really flat spell… [Where students are] bored with it [the activity] and they're bored with the environment and they're bored with me…. So the need to often mix things up is important" (T2IntQ4a).*

4.3 Research Question 3

What encourages students to engage in online activities?

In an online course there are a number of different activities and dynamics that occur that have the potential to engage or disengage students. This section looks at the aspects of the online courses studied to determine which parts engaged students in the activities. The focus is on the student views in order to complement or contrast the teachers' perceptions that were reported on in Research Question 2. In addition to the interview and questionnaire data of the students, evidence from the LMS—from the discussion forum postings and system statistics—was drawn on where available.

The students were asked in the questionnaire to rate how often they had done particular things in the online class, from "never" up to "very often", during the school year. The results can be seen in Table 4.3. What this data shows is that overall the students surveyed believed they were engaging in the online courses in a range of ways and usually did not have any particular difficulty in learning online. The students recognised that their

teachers were giving them feedback and that there were support mechanisms in place to get help from the teachers or other students.

This research question looks at what engages students in online activities. How they fit into the three main types of engagement—emotional, behavioural and cognitive—will be explored where appropriate.

4.3.1 Relationships and support

Relationships between students and with their teacher appeared to be important to students in their engagement and learning. Having good relationships and a sense of

Table 4.3: Student engagement in online course

During the current school year, how often have you done the following?				
	Very often	Often	Sometimes	Never
	(frequency of student responses)			
Attempted an online learning activity	9	1	0	0
Completed an online learning activity	6	4	0	0
Shared your thoughts or made comments in an online discussion	6	2	2	0
Replied to another students comment in an online discussion	4	2	4	0
Asked questions about another student's discussion comment or online work	1	5	3	1
Received feedback from your teacher	6	3	1	0
Received feedback from another student	1	7	2	0
Given feedback to another student	2	5	3	0
Worked on an online learning activity in a group	1	2	5	2
Worked on an online learning activity on your own	5	4	1	0
Received help from your teacher	0	7	3	0
Received help from another student	0	1	8	1
Given help to another student	0	3	5	2
Asked for help online	1	3	5	1
Had difficulty learning online	0	0	8	2
Made a presentation online	1	5	3	0
Created something online (e.g. a webpage or using an online tool such as Voicethread, Wiki, YouTube)	4	5	1	0

community helped students feel comfortable to ask for help or support from others. Relationships were built through structured online interactions between the teacher and students, as well as amongst students. The building of relationships was particularly evident when students described support.

There are two main types of support that can be given to students in the online classes—support from the teacher and support from other students. Both teacher support and student support were identified by the students as beneficial to learning.

Student 9 found this important through one activity where students created an ID card and shared a little about themselves,

> *"Just looking at the other students ID cards was, ah, I got to learn about them and then, ah, when I commented on one, ah, ID card they replied and told me a bit more about… where they lived and what they'd put on the ID card" (S9IntQ1)*

When probed about the activity and whether learning about their classmates helped them learn throughout the year, he responded by explaining that having an understanding of what other students were good at helped him identify who they could go to for help in certain situations,

> *"Well asking them for help, it also helped to know which people I would ask for help in different situations because some of them are good at transferring files... And some of them are good at ah, other things as well." (S9IntQ1)*

Making connections helped Student 9 to stay engaged with his learning and build positive relationships with his peers.

While working in groups, Student 3 comments that he learns off the other students,

> *"everybody's always helping each other with different, different activities, which is good, and giving their opinion on… telling them how they could probably improve and what they could do better" (S3IntQ3).*

Support was also given by students to their peers as feedback within the discussion forums. In some cases it was unclear whether the intended recipient read the feedback or acted on it. It appears however, that the students felt safe to state something positive about what their classmates had done, but found it more difficult to say how something could have been done better within the open forum.

> *"Wow that is a really great story you wrote… I think that how you used deathly silent in your story it made the story hook people in so that story was well written I don't think you could do anything better." (S5C1Disc6)*

"I really like how you chose to do Nadia Comaneci. She is a big moment in olympic history. I don't think you needed to change anything. Great work!!" (S4C1Disc6)

One student did add some constructive feedback into the discussion forum, however this was not common,

"You must have had fun on this diving experience. You used lots of describing words. You didn't describe in a sentence what was actually 30-40ft deep. I think you could of added what it was before you wrote the depth. Overall it was a good report. well done!" (S4C1Disc6)

A comparison was made by Student 6 between the support they get, both from their teacher and other classmates, in their online class with the support they received in a face-to-face, traditional classroom setting,

"When I want to learn online it's quite easy because, ah, if I was in just a normal school the teacher would be focused on like a whole bunch of students, not just me, so I'd get, ah, skipped over quite a few times. But on here, with the activities I could, um, get a lot of attention from [the teacher] or if I needed help I could just ask another classmate. Um, so it was really ah, helpful. If I was stuck I could just ask someone else if I didn't know." (S6IntQ3)

This comment from Student 6 indicates that the quick support they received from their teacher (or from others) was beneficial to their learning and therefore both their behavioural and cognitive engagement. Without the quick support, students could become disengaged.

4.3.2 Feedback

Feedback and support from other students has already been mentioned in the section on relationships and support (section 4.3.1). This section focuses on the feedback students received from teachers.

A range of feedback practices occurred in the online class that fostered student engagement. Two broad types of feedback were taking place—feedback focused on the individual and feedback focused on the task. These feedback practices included teachers giving specific feedback about a task, scaffolding of a task and encouraging interactions amongst students.

Feedback focused on the individual

Student 7 and Student 5 described feedback focused on the individual when asked what the teacher did to encourage or motivate them to work through an activity,

> *"When I'm in need of help with an activity we usually call her or Skype her or something and usually she gives us a little pep talk to keep us going." (S7IntQ5)*

> *"She'll say sometimes, 'just keep going, you'll get through it' and, um, she also encourages you by just sending little smiley faces on Skype sometimes." (S5IntQ5)*

It appears that a lot of the individual-focused feedback and support occurs externally to the LMS in one-on-one conversations over the phone or using Skype,

> *"When I'm in need of help with an activity we usually call her or skype her something and usually she gives us a little pep talk to keep us going." (S7IntQ6)*

> *Interviewer: "And you do that over Skype or email or how do you discuss that [the need for help]?"*
> *S8: "Mostly through Skype". (S8IntQ6)*

Individual-focused feedback is evident also, to some degree, in the discussion forums as well. The following example from Teacher 1 is written in a way that could appeal to the emotions of the student, explaining what they have done well but doesn't give any next steps that would help in further cognitive engagement with a similar task.

> *"I really like your mindmap [student] the lay out is excellent you have shown you can follow instructions well." (T1C2Disc3)*

Feedback focused on the task

It took one student a bit of time to realise that constructive, task-oriented feedback was useful to them to learn from and improve in the future. Student 9 described the moment when he realised the usefulness of feedback to engage cognitively. For Student 9, feedback started off individual-focused, possibly with the intention of making him feel good about it. When feedback came that showed there was room for improvement at first this hurt his ego before he realised that the information contained in the feedback could help him.

"…at the beginning of the year I got feedback from something and it said, 'great job for your first assign, for your first bit of work', and then later on there was one bit of work that, ah, she said I needed to improve on and at first I thought, 'ah I didn't get it right, I can't do this'. But then I realised that [the teacher] had given me some good information and if I did that activity again then I could probably do it better than if I did it the first time. So I think feedback from the teacher I have, good or bad, or good or improvement needed, is ah, quite nice to have." (S9IntQ3)

Individual and task-focused feedback

In a number of cases, the feedback given by a teacher was both focused towards the individual and the task. Often it would start off with a positive statement to encourage the student before becoming focused on the task, feeding back on what was done well and what needed further development either straight away or as something to consider for future tasks.

Teacher 2 gave feedback in a discussion forum to a student on a piece of writing. They began with a very individual-focused, encouraging statement,

"This is a fabulous effort from you!"

And then continued to explain what was good about the writing (task-focused),

"You have drawn us into the scene and we wait with baited breath for the result. I liked the way you reminded us that this means third best in the world, it was a story that could so much have gone to look like a disappointment but you have stamped your own brand of positivity onto it."

Teacher 2 then explained the next steps (task-focused) before finishing with another positive, encouraging statement,

"It's great that you are paragraphing your work. The next step is to add some detail to your paragraphs and make them a little more substantial…. I like the way you have chosen to describe a few jumps to us, not all of them, that would have been boring! Great effort." (T2C1Disc6)

In one example Student 7 received feedback from his teacher within the discussion forum, however there was no online response from Student 7 to the question asked by the teacher in the feedback comment.

> *"Good descriptions [S7]! Do you have a general preference for watching movies over books?" (T2C1Disc4)*

Students recognised that feedback from their teacher helped them to learn and this was indicated in the interviews. However, when examining the online discussion forum data, it was unclear how much the students read the feedback given to them or used the next steps in later work.

4.3.3 Interest and relevance

A student's interest in, and relevance to, an activity was believed by teachers to be engaging. The students also agreed in their interviews that interest and relevance was important to them. During the research period, the Olympic Games were an ongoing current event and had some relevance to the students. In Class 1, they had a general Olympics discussion going on in which the students (and teacher) could share some of what they had watched or heard during the Olympics. This discussion had quite high engagement with 49 posts written by the entire class (19 of which were authored by the teacher) compared to the other discussions.

In one activity entitled, 'Write as you are', in which students were asked to write as though they were a spectator at an Olympic Games, a high level of behavioural engagement was evident. In Class 1 there were 49 posts written by the entire class (16 by the teacher) and in Class 2 there were 45 posts written in total (12 by the teacher). The activity may have had some relevance to the students as it was about a current event at the time and captured their interest. It also suggests that the students may have enjoyed reading what their peers were writing as they were interested in it and therefore they engaged in it.

The number of posts written indicate that students engaged behaviourally overall with this activity, but there was also noticeable cognitive and emotional engagement. In the following example, emotional engagement is seen through the use of the word "liked"

and the phrase, “gives me the shivers”. Thinking about what hooks the reader in shows a level of cognitive engagement.

> *“I really liked how you said the sun reflecting off the extensive bright blue pool it was a good hook… I really liked how you said my toe crunched backwards because I just imagined your toe going snap that gives me the shivers.” (S5C1Disc6)*

This next example from Student 4 also shows cognitive engagement in which they point out some areas for the student to work on,

> *“You must have had fun on this diving experience. You used lots of describing words. You didn’t describe in a sentence what was actually 30-40ft deep. I think you could of added what it was before you wrote the depth. Overall it was a good report. well done!” (S4C1Disc6)*

In the interview with Student 6, enthusiasm was shown when he was given the opportunity to talk about a favourite activity he was given. Throughout this part of the interview Student 6 kept adding more detail of what was required and what he did. It was very clear he enjoyed the activity and so was emotionally engaged in it, but through his description it was also clear that he was cognitively engaged.

To begin, Student 6 showed he was cognitively engaged by describing what he was learning and giving specific evidence about the octopus beak.

> *“Um, that would probably have been last year when I had we had to design a, ah, tank, well, an imaginary tank for an octopus…. And we had to think of different ways to give him food but so that he couldn’t get out of there. Cos um, we were learning about octopuses and how they could fit through gaps that were incredibly tiny and that the only hard part on their body was the beak which was basically their mouth.” (S6IntQ1)*

Student 6 was clearly interested in the topic being studied and this helped make it relevant to him.

> *“Well I really, um, am fascinated by animals so I just really enjoyed learning about it and getting some new information, ah, about like octopuses and any marine animals that it might be fed.” (S6IntQ1)*

Other students also talked about having an interest in the topic of their described favourite activity. The following are two responses from students about the importance of interest in a topic or activity,

> *"Yea, because if like if you don't enjoy it, its, you don't really want to do it so it' kind of just a thing that you have to do." (S8IntQ3)*

> *"if I'm not interested in something I'd usually just do the activity cos I have to and not learn much from it." (S3IntQ3)*

Both of these student examples above show that if students are not interested in an activity, they will often still do it, but only because it is expected of them.

4.3.4 Fun and enjoyment

Closely related to interest and relevance is the idea that activities should be fun and be enjoyed. Enjoyment or 'fun' was suggested as important by a few students in helping them to learn, therefore increasing the likelihood of engagement.

Student 3 and Student 9 both talked about activities they found fun to do. Student 9 went on to explain that if an activity was fun they found it harder to give up on it even if it seemed difficult.

> *"Well for a start because it's quite fun, ah, making your own little avatar to talk." (S3IntQ1)*

> *"Yea, ah, because the more fun an activity is the more I, I like to do it and so that makes it hard to stop doing an activity and say I don't want to do this anymore…. Just because I can't do it… when it's fun it makes it impossible to say I don't want to do this, it's too hard." (S9IntQ3)*

Enjoyment is important in an activity, not only does it encourage cognitive engagement, it also encourages emotional engagement. Student 8 suggested that if an activity was not enjoyable to a student they were less likely to want to engage in it at all. She mentioned that if it was not enjoyable it became "*just a thing that you have to do*" (S8IntQ3). Other students stated that they do all activities regardless of whether they enjoy them or not.

> *"I completed it. Um, I complete all of the online activities that are, that um I need to." (S3IntQ2a)*

"I always attempt them. If I'm given work, there's no doubt about it, I always attempt it." (S6IntQ2a)

This demonstrates that enjoyment of an activity is important to students however, the group of students who participated in this study made an effort to engage in all activities regardless of whether they enjoyed them or not.

4.3.5 Design of activities

One area that appeared to have a strong influence on the engagement of students was the design of learning activities. This was not described by the students or teachers but was evident throughout many of the discussion forum activities within the LMS. Many of the activities given to students that were completed within the discussion forums were written in a way that encouraged engagement from students and interaction between them. For example, in one activity that all three classes were intentionally given, emotional engagement was encouraged. Students had to think about the Dickensian conditions from "A Christmas Carol" and compare it to what they may have seen in their situations,

"Have you ever come across Dickensian conditions in the modern world? Or have you ever met a scrooge? Write a few sentences using using [sic] one or more of the expressions from the video and post them here" (C1Disc2, C2Disc8, C3Disc4).

In another discussion, the students were given two excerpts from "A Christmas Carol" describing two different characters. The students were then asked,

"What is your first impression of these characters written by Dickens? How does his choice of words help you form a vivid picture of each? Give examples." (C1Disc3)

These questions encouraged students to engage cognitively with the excerpts and explain why they had these impressions.

The second part of the activity asked the students,

"Would you like to meet eithr [sic] of these characters? Why/whynot? [sic]" (C1Disc3)

These questions encouraged the students to engage emotionally with the activity. They asked for an emotional response from the students. They also asked for a cognitive response in terms of analysing the excerpts and explaining what made them feel this way about the characters.

This activity elicited some responses that demonstrated high cognitive engagement from the students as well as emotional engagement.

In this first example from Student 8, the first part shows high cognitive engagement in that she has explained what it is from the excerpts that made her believe the characters are as she describes,

> *"I get the impression that the first character is a criminal, possibly exiled from a place. I think he has been in prison, but has escaped, hence the great iron on his leg. He definitely does not seem like a nice person, especially after grabbing me by the chin… I think the woman was to be wed quite a long time ago, but her fiancé left her standing at the altar, possibly because of an accident?"*

The question at the end of the response above shows that Student 8 was questioning what may have caused the woman to be where she is now. This shows high cognitive engagement.

In the second part of her response, Student 8 is showed emotional engagement through the emotive words she used,

> *"I feel that she is still waiting for her wedding and she wears the dress to keep her hopes up.*
> *I would hate to meet the first character, but I wouldn't mind to meet the second." (S8C1Disc3)*

Student 6 also gave a response that showed high cognitive engagement and emotional engagement.

> *High cognitive engagement:*
>
> *"My first impression of this man is that he is broken, tortured and hurt. I think that he could have escaped from jail because when it say's "he has a great iron on his leg." This could be the metal ankle strap from the jail house." (S6C1Disc3)*
>
> *Emotional engagement:*
>
> *"I think that I would feel sorry for him at first but not after he had grabbed me by the chin , this would would freak me out." (S6C1Disc3)*

High cognitive engagement:

"My first impression of the woman is that she was married a very long time ago and she tried her old wedding dress on. She is thinking and remembering about her wedding a long time ago. I think this is because the old white dress has lost it's true colour and is faded and yellow, also she is withered and old like the flowers she carries and that she has no brightness left in her except in her sunken eyes. This means time has not stood still , she has aged but her eyes still show life and fond memories. She has not put the other shoe on because she is lost in a sea of her own memories and thoughts." (S6C1Disc3)

Emotional engagement:

"I think that I would like to meet the woman she seems like a grandmother but the old man no, I would not like to me him at all , he seems quite scary and mean." (S6C1Disc3)

Another discussion activity that encouraged emotional engagement from students was in Class 3 where they were having a look at their Olympic wikis. The activity stated,

"What features of your wiki went well? Were you able to include any animations or use other exciting features? Tell us what interested you most. What is your best page?" (C3Disc1)

This activity encouraged emotional engagement by inciting emotive responses from students by asking what went well or 'what is your best page?' Using words such as 'exciting' can also elicit an emotional response.

4.4 Conclusion

This section has reported the findings of the study based on each research question. It has looked at what activities students preferred to engage in.

The findings from research question one showed that there was a range of activities that were preferred amongst this small group of student participants. However, overall they appeared to prefer activities that took place mostly outside of the LMS. This was also what the teachers perceived students to prefer. Discussions were also rated as highly

preferred by students suggesting they like to be able to interact with their peers and the teacher.

The teachers' perceptions of how students engaged online were considered in research question two. They felt that it was important to nurture a strong learning community in order to help engage students through regular communication. The teachers also described that they also needed to personally engage in online activities to help the students remain on task.

The final research question focused on what actually engages students in online activities. The building of teacher-student and student-student relationships and the sense of community was important, and this was also seen in research question two. There was evidence that this played a part in engaging students. The design, implementation and facilitation of the online learning activities also appeared to have an influence on student engagement.

In the next chapter, the findings presented here will be discussed in relation to the existing research literature.

5 Discussion

5.1 Introduction

This case study within three Year 7-10 classes at a New Zealand distance education school was undertaken to gain a better understanding of how students engage in fully online, distance courses. The following research questions guided the investigation:

1. What types of activities do students prefer in online courses and what are the reasons behind their preferences?
2. What do teachers perceive engages students in online courses and why?
3. What encourages students to engage in online activities?

Research at the school level has often focused on teacher or administrator perceptions of student engagement in a course rather than on student voice (Barbour, 2010). For this reason, a particular focus was given in this study to hearing from the students. Furthermore, this research attempted to bring the student and teacher viewpoints together to compare them with the evidence of what occurred in the online classrooms in relation to student engagement.

This chapter will discuss the findings of each research question in relation to the literature. Research questions two and three will be discussed together as they are closely related. By linking these two research questions a clearer picture can be seen of what engaged students online within the research context.

5.2 Research Question 1

What types of activities do students prefer in online courses and what are the reasons behind their preferences?

5.2.1 Preferred activities

Where students identified a preferred activity within this study, it was considered that this would be an activity they would likely engage with. Within this study it was found that there were a number of different types of activities that students preferred. These were: activities outside of the LMS; asynchronous discussions; quizzes; as well as individual and group activities. Each individual had a particular preference and although there was

some agreement amongst participants there was no one online activity that can be stated was a clear preference across the group. With the low number of student participants (n=10) and the range of preferred activities given by students, there was not enough available data to see a standout preference of online activity emerge. Within this study it was found that there was a range of activities that students preferred. This appears to be consistent with Dixson's (2010) findings. Other research has identified the importance of attributes of activities such as social presence, interaction and collaboration (e.g. Bolliger & Inan, 2012; Chen et al., 2010), rather than the activities themselves, as what made them engaging to students. These are discussed in later sections of this chapter.

Although there was no standout preference seen for online activities, working on an activity outside of the LMS and taking part in asynchronous discussion forums ranked slightly higher across the group in student preference than other activity types. The reasons behind these preferences are given in the next section.

5.2.2 Reasons behind activity preferences

Due to the lack of agreement across the student participants of a preferred online activity, this section considers all reasons given by students across all preferred activities. It explores what aspects of an activity make it preferred by students.

Creativity

The reason that most of the students gave for choosing their preferred activity was that it allowed them to be creative. This shows that for this group of students creativity was important. Where students were given activities based around the discussion forums that allowed or encouraged creativity, the overall number of posts written by students was greater than for those activities that did not require an element of creativity. The behavioural engagement of the students within the creative activities was greater than within the less creative activities.

Having the opportunity to be creative was a reason given by all the students who chose working outside of the LMS as their preferred activity and suggests that the LMS, or the way in which the teachers were using the LMS, may not allow enough opportunity for students to be creative. Within the LMS there was no functionality available for students to work on their projects or assignments, but only places to submit or discuss them. The LMS appeared to be set up primarily for the transmission of information—disseminating

learning materials to the students, and places for students to submit work or take part in discussions—rather than a place where the students can create their work. The opportunities available to students through the use of Web 2.0 tools discussed by the students in the study—such as Voki (www.voki.com) and wikis (e.g. www.wikispaces.com)—allowed students to be creative and present things in their own way. The students may prefer the autonomy that is available through working with online tools outside of the LMS.

Several researchers (Bogdanov et al., 2012; Hotrum, 2005; Sclater, 2008) have indicated that LMSs tend to be quite formal, structured and inflexible and tend to be focused on the needs of the institution rather than the student (Severance et al., 2008). This inflexibility of the LMS may be a limiting factor in students being creative online. It has been acknowledged that there is a growing emphasis by users of the internet to create, publish and share with others online (Downes, 2005, 2007). The students in this study appear to be no different in wanting to create. There was also evidence of one student who was looking for an audience to share with. By moving out of the LMS and using Web 2.0 tools, students can be enabled to be creative as well as being able to share with an audience wider than their teacher or class. This is discussed further in section 5.3.2.

Thinking and challenging activities

Half of the students identified that they liked activities that make them think or are challenging. The desire to have to think in an activity or to be challenged appears to suggest that students like to be cognitively engaged in an activity. Students who are cognitively engaged have made a personal investment in the activity as outlined by Harris (2008). This investment is shown through the thoughtful responses they give.

Although these students liked a challenge, there was also an indication that a balance was required between challenging and simple activities. When comparing student perceptions with data from within the LMS, some of the clearest evidence of high cognitive engagement seen in the study came from activities where students were required to think and formulate responses based on analysing what they had been given. Activities that were challenging and required students to think appeared to be more engaging for the students. The evidence from the study suggests however, that students could become disengaged by having too much of either extreme—challenging or simple activities. This

is consistent with other findings that disengagement occurred where activities were not at an appropriate level of difficulty for a student (Burger et al., 2012; Ministry of Education, 2008). Liao (2006) described boredom as a result of activities that are not challenging enough, and anxiety as a result of too great a challenge. It is necessary, therefore to ensure that teachers provide a range of activities at differing difficulty levels while trying to meet the needs of all their students.

Collaboration

The next most prominent reason given by the students for why they chose their preferred activity was the opportunity for collaboration through discussion with other students or through working in a group. The students saw advantages in working together because of the increase in *"brain power" (S6IntQ1a)* within a group as well as more opportunity for support from peers. Collaboration occurred both synchronously and asynchronously.

Student collaboration has been reported as being important to online student engagement (Chen et al., 2010; Dixson, 2010; Garrison, 2006). The student participants also indicated that collaboration helped them to increase cognitive engagement through having more people working towards the outcome of an activity. Although students saw value in collaboration, there was also an indication that it was not always a positive experience. It was suggested that some students are not good at working with others; and as some of the students were living outside of New Zealand, consideration needed to be made for students living in different time zones as it was sometimes difficult to find a time to connect synchronously. This is consistent with the findings of Liu et al. (2010) who found that time zones affected both synchronous and asynchronous discussions through both setting up an appropriate synchronous discussion time and through timely responses in an asynchronous discussion.

Quick to do

While students also indicated in the questionnaire that they preferred activities that were quick to do, there was little evidence found elsewhere to support this. One of the activities that appeared to be quick to do had a very low response from students. This indicates that there could have been a difference between what students thought they preferred and therefore shared within the questionnaire and interview, and the types of activity they actually engaged in. It is also possible that students may find they lose interest or

motivation in an activity if it continues too long as reported by Henningsen and Stein (1997). It is possible that other factors such as interest and enjoyment, as discussed in the next section, may have had a greater impact on student engagement than how long an activity took the student to do.

5.3 Research Questions 2 and 3

RQ2: What do teachers perceive engages students in online courses and why?

RQ3: What encourages students to engage in online activities?

Research questions two and three are closely related and so are being discussed together in order to give a clearer picture of what appeared to engage students online within this research context.

5.3.1 How is student engagement considered by teachers?

The teachers in this study did not differentiate between different types of engagement, nor were they asked to do so. The descriptions of online student engagement that teachers shared appeared to be focused on behavioural and emotional engagement more than cognitive engagement as defined in Gibbs and Poskitt (2010). The teachers described student engagement as students taking part in the activities, completing their work and interacting with their peers and the teacher. These all focus primarily on behavioural engagement. Regular contact between the student and the teacher appeared to be of high importance to the teachers in order to see that the student was engaged. The teacher-student contact described was not always school or activity related but sometimes of a personal nature. This type of personal contact may be used for relationship building and therefore have a focus on the students emotional engagement. It should be considered that the teachers' understanding of the term 'engagement' may relate primarily to the notion of online participation being a driver of online learning as outlined by Hrastinski (2009). The fact that the teachers did not describe aspects of cognitive engagement as a part of what they look for in online student engagement is understandable as the literature describes student engagement as 'ambiguous' (Parsons & Taylor, 2011) and not clearly defined (Zepke et al., 2010). This also suggests that teachers may understand the word "engage" as relating to the dictionary definition of "participate or become involved in" ("Engage [Def. 2.]," n.d.) as this would more closely relate to the more readily observable behavioural engagement.

Cognitive engagement was not precluded from what the teachers looked for in online student engagement even though they did not describe it when asked. Cognitive engagement was considered by teachers when they viewed any work that the students submitted online. Evidence of this was seen in some of the feedback they gave to students in the discussion forums. It is possible that cognitive engagement is not as clear as behavioural engagement for the teachers to identify or define. However, evidence of cognitive engagement was available to teachers in the discussion forums, even if they were not aware of it, through looking for student cognitive presence which focuses on higher-order thinking processes (Garrison et al., 2001). For an online teacher to be able to see signs of cognitive engagement, it requires students to either submit work to their teacher online, write a post in an asynchronous discussion forum or demonstrate understanding through synchronous communication with the teacher through, for example, Skype or over the phone. This means that a student needs to have behaviourally engaged before any evidence of cognitive engagement could be visible, as Gibbs and Poskitt (2010) identified previously. The need for work to be submitted or discussions to take place through asynchronous methods could be advantageous to seeing cognitive engagement in students as it allows the student more time to compose their work using critical thinking skills (Robinson & Hullinger, 2008).

5.3.2 What engages students online?

Working outside the LMS

Student interviews and questionnaire data showed that students valued the opportunity to work outside of the LMS. Several of the most enjoyed activities described by students were using Web 2.0 tools external from the LMS.

The teachers also perceived that students who were able to work outside of the LMS engaged highly. They believed that this was because the activities available outside of the LMS gave the student some control, choice and ownership over what they were able to do and present which was not available to students within the LMS. These perceptions from the teachers are in line with Deci and Ryan's (2008) research that shows autonomous motivation, which can result from being given choices, as promoting better understanding, higher grades and more creativity. Within the school's LMS, the setup was such that the students had little opportunity to change even the colour or layout of

their course homepage. It is possible that the setup of the LMS, as the name 'learning management system' implies, was centred around the teacher or school rather than centred around the student—an observation shared by others about LMSs in general (Mott, 2010; Sclater, 2008; Severance et al., 2008; Taraghi, Ebner, Till, & Mühlburger, 2010). Even the look and feel of an institution's LMS is generally determined by an administrator.

Getting students to work on activities in websites external to the school's LMS means going away from the restrictions that such a secure environment provides, where students and teachers are limited by the tools and functions that are available within it. Within the LMS, there was provision for students to participate in discussion forums and submit assignments for feedback from the teacher, but there appeared to be limited opportunity to work collaboratively or creatively as there was limited functionality available to work in this way. Working outside of the LMS could give more opportunities for student collaboration through the use of tools such as wikis and Google Docs (http://docs.google.com). The restrictive nature of the LMS, in terms of being institution-focused rather than student-focused, has been highlighted in research which suggests using Web 2.0 tools to create personal learning environments (PLE) (Dabbagh & Kitsantas, 2012; Sclater, 2008; Tu et al., 2012). One of the reasons for the suggested shift to the PLE is to give students the opportunity to work in their own ways with tools they know and prefer. This offers personalisation to the student that some LMSs do not allow (Dabbagh & Kitsantas, 2012). There are implications however, that need to be considered by teachers and institutions with moving to a PLE rather than an LMS. These include the need for teachers to have an understanding of a much larger range of web-based tools and for institutions to have processes in place to manage student work, privacy and safety (Redecker, Ala-Mutka, Bacigalupo, Ferrari, & Punie, 2009). Therefore, it is important for schools to give careful consideration to the learning environment they choose to implement.

Safe and supportive environment

The building of community and the support that comes with good relationships was seen by both students and teachers as important to in engaging students in learning. Through the careful planning of activities that helped students get to know their peers and develop their social presence, the teachers of the online classes were able to develop a safe online

learning environment for the students. The students believed that the relationships they built with their peers enabled them to feel comfortable to ask each other for help and support when required, instead of always approaching the teacher, and this was something they valued. The students who made connections with their peers and their teacher appeared to develop into a community of learners (Tu & McIsaac, 2002), and knew who to approach for help. This sense of belonging that is developed through connectedness (Bolliger & Inan, 2012) and social presence (Hughes, 2010) appears to have increased the emotional engagement of students. As a result of the increase in emotional engagement, behavioural and cognitive engagement could also potentially rise (Gibbs & Poskitt, 2010) due to students feeling comfortable enough to ask for help when they need to. In the asynchronous discussion forum, evidence could be seen of students engaging with activities, sharing their work and being willing to both give and receive feedback with their peers. This indicates a high level of emotional engagement through feeling safe in the online classes.

Feedback

Feedback was regarded by both students and teachers as important in an online course. It was given to students both by their teacher and by other students, although the latter was most likely to occur only if it was a requirement of the activity. There was little visible evidence within the data of students using the feedback to improve on their work, so it was unclear what students did with the feedback. This was however, not a specific focus of this study. If students were asked to make changes to their work based on the feedback given, this may have required students to re-engage behaviourally in the activity after initial completion. Students in the study were not always asked to make changes to the activity they had just completed. The feedback could also be used to guide future activities of a similar nature. Receiving feedback and acting on it appeared to require a degree of emotional engagement from the student to accept the critique given as well as cognitive engagement in interpreting the feedback and making the appropriate changes to the work.

Feedback is discussed here in regards to timeliness, and the types of feedback seen.

Timeliness of feedback

Students in this study did indicate they liked to receive prompt feedback on the work they had done. This is consistent with the research of Kuh (2003) who, when considering traditional face-to-face learning situations, found that prompt feedback is an important factor in engaging students. Ertmer et al. (2007) also recognised the importance of providing timely feedback to online students as it helps them to be cognitively engaged. Robinson and Hullinger (2008) also suggested it helps students feel less isolated, which can aid in emotional engagement. While most of the students in this study indicated that they did like to receive prompt feedback, there appeared to be an understanding that the teacher could not always respond with feedback as fast as the students may have liked due to the other students in the class also requiring the attention of the teacher.

Types of feedback

Two broad types of feedback were given both by teachers and other students. The first is described in the results chapter (chapter 4) as *feedback focused on the students*. This targeted emotional engagement through building up the students' self-esteem and making them feel good. Examples of ego-oriented feedback include phrases such as, "'Good girl' or 'Great effort'" (Hattie & Timperley, 2007, p. 96) or other types of praise given to a student. Hattie and Timperley (2007) describe this type of feedback as *feedback about the self as a person*. The second type of feedback is described in the results chapter (chapter 4) as *feedback focused on the task* which gives students feedback specifically relating to the task. Feedback focused on the task is most likely to target cognitive engagement. Hattie and Timperley (2007) describe this in two parts, *feedback about the task* and *processing of the task*. The former gives feedback, for example, such as whether a question is correct or incorrect, or in need of further information; the latter looks at how a task has been processed and understood with a deeper level of understanding (Hattie & Timperley, 2007).

Within the study, where feedback focused on the individual was the type given to students, there appeared to be no further engagement by the student in an activity. This is likely due to there being no recommendations for improving on the current or future activities. Feedback focused on the task gave students the opportunity to engage further in an activity by reworking a section of the activity or consider the next steps in regards to either the current activity or a future one. It was unclear whether students did consider

the feedback for a future activity as this was not a focus of this study. Hattie and Timperley (2007) found that feedback that was task focused and process focused was more likely to lead to higher achievement than feedback focused on giving the student praise.

Students in this study who gave feedback to their peers appeared to demonstrate cognitive engagement in the critiques they gave. This suggests that the process of having to read, process and understand the work of their peers was likely to be helping in the learning of the student giving the feedback, as has been seen in other research (Reese-Durham, 2005). Giving peer feedback also required students to be emotionally engaged and was only possible through having a safe environment where they can be comfortable to make judgements of the work of their peers. It was noted however, that there was little evidence of students making suggestions to their peers on how to improve. This may be due to a lack of maturity, knowledge and skills because of the age of the students. It is unclear also how much guidance was given to students on how to give peer feedback so the students may not have known what to do. Gielen et al. (2010) indicate that training is required for peers to give appropriate feedback and that it is important to realise that peer feedback cannot replace the feedback of an expert, usually the teacher. Most of the feedback given to peers appeared to be focused on the individual, describing that the work was ‘well done’ or that it was ‘liked’. This might indicate a level of discomfort, a feeling of impoliteness in being negative towards another student or a lack of knowledge on how to give feedback. Where students were specific in what they wrote about what had been done well, or how the work could be improved, they demonstrated high cognitive engagement.

Interest, relevance and enjoyment

There was agreement across the teachers and students that activities that were interesting to students or had relevance to them were more engaging. Relevance was viewed in this study as having some connection between the students and the topic of the activity, for example, a current event such as the Olympic Games or a particular hobby and passion that the student has. Renninger and Hidi (2011) use the term “meaningfulness” to describe personal relevance to the curriculum.

All three types of engagement were seen through activities that were of interest or had relevance to a student. Interest in a topic could help a student to engage emotionally with the activity due to a positive connection. These emotional connections could be seen through some of the student feedback given, describing how the text they had read made them feel.

The student who described the beak of the octopus (see section 4.3.3) and designing the octopus tank showed clear signs of emotional engagement through the enthusiastic descriptions given in the interview. The topic was of great interest to him and as a result his excitement shone through as he spoke. The way he described what he learnt during the activity, in great detail, demonstrated cognitive engagement. Ainley et al. (2002) call this type of interest, where the student is particularly interested in a certain topic, "topic interest". While Renninger and Hidi (2011) acknowledge that interest is an important part of increasing student engagement, Harris (2011) argues that if teachers focus too much on student individual interest it could be at the expense of cognitive engagement. This suggests that teachers need to find the balance of engaging a student through individual interest and engaging them in required learning, or teachers need to develop activities that provide longer lasting situational interest (Renninger & Hidi, 2011) in order to help maintain student engagement.

Related to interest, activities perceived as being fun or enjoyable were also seen in this study to engage students. This idea of relevance and fun being important in the engagement of students was also seen in a study by Wood (2012). The students in this study explained that activities that are fun are harder to give up on. This suggests a possible emotional connection which could lead to emotional engagement. Skinner et al. (2009) argue that "enjoyment, fun, and satisfaction" (p. 10) are included in the make-up of emotional engagement. Although not clear from this study, some of the activities that students engaged in because they were fun, may have been new, or had a novelty factor to them. The novelty of an activity has been described as helping to increase student interest (Renninger & Hidi, 2011). Teachers need to consider in their planning of activities whether high engagement in a previous activity was due to novelty as the lack of novelty in a similar activity may result in lower student engagement.

Some of the students also indicated that although not all activities were enjoyable to them, they would still complete them. This is an example of behavioural engagement where the

student is completing their work because it is a requirement of the teacher (Fredricks et al., 2004; Gibbs & Poskitt, 2010). It is possible they completed these activities simply because they are good students or they may have been doing them to avoid any negative consequences of not completing them, an example of two types of extrinsic motivation (Deci & Ryan, 2008). Students could also be cognitively engaged in these situations if they are demonstrating deep thinking and understanding of the ideas taught. There was also evidence of behavioural engagement leading to emotional engagement as students who did not initially enjoy an activity started to enjoy it over time.

Students in the study suggested that activities that are interesting and enjoyable were easier to remain focused and engaged in. Students were more likely to work on activities that are interesting and enjoyable because they had an emotional connection with them rather than because they do not want to risk negative consequences.

Teacher presence

Three of the teachers indicated that at times low student engagement was a result of the teachers themselves not engaging enough in a learning activity. They found that if they did not remain focused on the activities given to students, reminding them to participate, as well as encouraging and motivating them, that the engagement rates from students could be low. This was particularly so in activities where student engagement was low from the beginning. It was necessary for teachers to remain focused on an activity; ensure they were interacting with the students; and to give the students appropriate guidance, support and motivation if and when it was required. Low engagement in this case was also an opportunity for the teacher to reflect on the activity and try to find out from the students why they had not participated in order to either reframe the activity or learn from it for future reference. Research shows that teacher presence, particularly involving the facilitation of learning (Garrison et al., 2001) and motivation of students (Bolliger & Inan, 2012; DiPietro, Ferdig, Black, & Preston, 2008) is important to help ensure students engage in online activities. Hartnett (2010) also found that when students did not feel supported by teachers there was a decrease in student motivation. Motivation has also been highlighted by Borup et al. (2013) in their new construct of teacher engagement based on the Community of Inquiry framework. One of the other elements that Borup et al. include as a part of teacher engagement is that of *monitoring*. The findings of this study align with Borup et al. (2013) in that teachers need to be engaged in monitoring and

motivating students. As the teachers identified, where they were disengaged or not monitoring and motivating students appropriately, the result was a lower level of student engagement.

Activity requirements

An area that was not reported on by either students or teachers but appeared to influence student engagement was the design of the online learning activities. The evidence for this was visible in the asynchronous discussion board activities. Through the specific wording and requirements of the activities, different types of engagement could be expected from students. The teachers developed the activities with the expectation that students would engage in them to learn. Emotional engagement was elicited from students when activities required them to state how they felt about a topic, event or piece of text, for example. Alternatively, the teachers could design an activity that was controversial and challenged the students' moral or ethical understandings which again elicited an emotional response. This is likely to require students to already feel emotionally engaged and connected within the learning community (Bolliger & Inan, 2012) in order for them to feel safe to respond, particularly if the topic conjures up negative emotions. Negative emotions cause a decrease in the efficiency of the brain (Clemons, 2005) resulting in a possible disengagement of the student.

Cognitive engagement was elicited from students when the requirements of an activity required them to do tasks involving higher order thinking skills, such as those outlined in the Revised Bloom's Taxonomy (Krathwohl, 2002) of analysing, evaluating and creating. When giving feedback on other students was a requirement, students had to engage with what their peers had done. This could have also resulted in cognitive engagement as the students needed to critically think about what they had read or viewed before posting a feedback comment.

5.4 Conclusion

This chapter has discussed the research questions through interpreting the findings of the study and situating them within the existing literature. It has shown that a range of activities were required to engage students online. It has also shown that the design and nature of the activities are somewhat more important than the type of activity in eliciting engagement in students.

Within this chapter a range of ways to engage students in an online classroom were seen. Working outside of the LMS was seen by both the students and teachers as being quite important in engaging students as it provided a wider range of opportunities than working within the LMS. However, there are a number of practical things that can be done to engage students within an LMS that have been indicated through the study. These include developing a safe and supportive learning community; allowing the students some ownership of their learning through providing them choices and control; careful structuring of the requirements of an activity; producing activities that are interesting and relevant to the student; giving prompt feedback; and ensuring the teacher remains engaged.

In the next chapter, the implications of the findings of this study will be outlined and conclusions drawn. Limitations of the study are described and suggestions for future research as a result of the findings are given.

6 Conclusion and implications

6.1 Introduction

This study has investigated what activities students in a New Zealand online Year 7-10 distance education class prefer to engage in. Data has been collected from both teachers and students as to what engages students online and has looked at the types of activities students actually did engage in during the study period.

In this chapter, overall conclusions will be drawn as to what engaged students online in this research context; implications for teachers and the school involved in the study will be presented; limitations of the study will be shared; and recommendations for future research will be suggested as a result of the findings.

6.2 Conclusions

This research has contributed to existing knowledge on what engages students online, not only in terms of behavioural engagement, but also with regards to emotional and cognitive engagement. While limitations are recognised and shared later in this chapter, this study has identified that different engagement types can be elicited from students through the design and nature of the online activities given. In line with previous studies (e.g. Bolliger & Inan, 2012; Hughes, 2010), the importance of the learning community was recognised in engaging students online through building relationships that resulted in an informal support network being developed amongst the students.

6.2.1 Working outside of the LMS

Within this study there was a strong suggestion from students and teachers that engagement was higher when working outside of the LMS using Web 2.0 tools. This may have been as a result of limited student autonomy available within the LMS to be able to personalise their experience online like they are able to with the Web 2.0 tools available to them elsewhere on the internet. These tools, external to the LMS, give students opportunities to collaborate, create, share and publicise their work, as Downes (2005, 2007) reported students are doing, increasingly, outside of formal education. Where an LMS does not include functionality for this type of activity, or where the LMS

functionality is too complex, teachers and students might find tools elsewhere on the internet that will meet their need. This raises the question of whether a school should have an LMS or use personal learning environments (PLE) which could be made up of various Web 2.0 or similar tools, or both an LMS and PLEs depending on needs. PLEs are gaining popularity amongst some in higher education (e.g. Dabbagh & Kitsantas, 2012; Sclater, 2008; Tu et al., 2012) in order to increase opportunities for personalisation and customisation of learning. The LMS gives a school and its teachers a single place to organise and deliver learning resources. While this can be done with other web-based tools, a LMS makes this a simpler task for teachers as managing learning is what it is specifically designed to do. Having a single system for the institution means that support is more easily accessible as fewer experts are required to aid in the setting up of the system or the ongoing maintenance and troubleshooting. There are also issues of privacy and security within Web 2.0 tools (Redecker et al., 2009) as the school may have less control over what happens with student data outside of an LMS. Guidelines could be developed as to how to keep students and their work safe online. These may include using only password protected sites and using pseudonyms instead of student names (Redecker et al., 2009).

A school could consider working with the LMS as a central hub, and branching out to a small variety of school-supported online tools where appropriate in order to ensure that the students and teachers can access the support they may need while using the tools. Working on activities outside of the LMS can increase student behavioural engagement, although it is unclear from this study what effect it has on emotional and cognitive engagement. As is seen in the next section however, it appears that carrying out activities outside of the LMS may be not as important as it first seems.

6.2.2 Nature of activities

The findings of this study appear consistent with what Dixson (2010) found in that there does not appear to be one type of activity that will always engage online students, but rather a range of activities is required to engage all students. Working on activities outside of the LMS was described by both students and teachers as preferable for students who are learning online, and engagement was evident. Further analysis however, showed that what the students were required to do within an activity had a greater impact on engagement than whether the activity was carried out inside or outside of the LMS.

Student engagement appeared to be linked with the nature of the activity—whether the activity allowed them to be creative, to work with others, challenged them in some way, or was of interest to them. Alongside this, the design of the activity with regards to what students were specifically asked to do, had an influence on the type of engagement elicited from students. These findings, while seen in this study in an online context, also apply in face-to-face contexts. They focus on the nature and design of learning activities and the findings may be transferable to other educational contexts.

Having an opportunity to be creative in a learning activity was the primary reason students gave for picking their preferred activity type. This was regardless of whether the activity was specifically carried out inside or outside of the LMS. There appeared to be a link between the activities students were doing externally from the LMS and the ability for students to be creative in those activities. Also, where activities within the LMS required a form of creativity, these activities showed higher behavioural engagement overall than other similar, non-creativity focused activities. Garrison et al. (2001) recognised creativity as a part of critical thinking to build cognitive presence, and there was evidence of increased cognitive engagement from students within this study when students were given the opportunity to be creative. While the LMS does appear to be a possible limiting factor in allowing creative responses from students due to the functionality available, where creativity was encouraged through writing discussion comments within the LMS, students still engaged highly. Where an LMS does not support a particular feature that is required by an online class to enable creativity, teachers and students may need to consider finding an appropriate tool elsewhere on the internet, rather than relying fully on the LMS to cater to their need. It is necessary for teachers to not only look at moving outside of the LMS in order to engage students but to find ways to design and facilitate the activities in order to engage students, incorporating aspects of creativity.

Another aspect that needs to be considered by teachers in the design of learning activities is the level of challenge involved in them. The Ministry of Education (2008) report stated that learning activities need to be developed at an appropriate level of difficulty and a similar finding was seen within this study. There was a strong indication that students like to be cognitively engaged through challenging activities. This does not mean that students do not also like simpler activities. Rather, a balance needs to be found between the mix of challenging and easier activities, while allowing for a range of student abilities (Burger et al., 2012).

As with difficulty level in activities, a balance needs to be found between the number of collaborative and individual activities given. While it appears that there is more cognitive presence within collaborative activities, leading to the possible co-construction of knowledge and ideas, students did not want to work in groups all of the time. Consideration needs to be made by teachers in giving group or individual work to online students as issues can arise such as was identified by one student who sometimes found it difficult to connect and communicate with other group members due in part to living in different time zones. While the time zone issue would not usually be relevant for traditional New Zealand school students, it did complicate matters for this distance school which also caters for New Zealand students living overseas.

Activities that generate interest in a student or are relevant to them appear to increase student motivation, which in turn positively affects student engagement. Interest in an activity impacts on emotional engagement through the connection that students make with the topic (Gibbs & Poskitt, 2010).

6.2.3 Learning community

Emotional engagement appears to be nurtured by teachers through the development of a learning community from the beginning of the course. Examples were given by both student and teachers of introductory activities where students were given the opportunity to get to know each other and their abilities. These introductory activities were an initial place for students to develop their online identity or social presence within the course which Swan and Shih (2005) explain helps develop a sense of connection with other participants. It is this establishing of connections and social presence that develops the community of learners (Tu & McIsaac, 2002). The connections that were made by students as they got to know each other helped students to feel safe and comfortable communicating and sharing with the online class, increasing their emotional engagement. The knowledge of the community members that was developed helped the students to recognise who they could go to for support. The students were able to build an informal support network for each other and not have to always rely on the teacher for help. The support given and received was not only technical support, but help in working on learning activities, and therefore gave opportunity for increased behavioural and cognitive engagement. The learning environment has been identified in playing a role in the emotional engagement of students (Meyer & Turner, 2006). Online this can be

partially achieved through the development of a safe and supportive learning community as it helps to develop a sense of belonging that is recognised as a part of emotional engagement (Shu et al., 2012). This requires teachers to carefully plan interactions between students and promptly dealing with any issues of disrespect or bullying.

6.2.4 Feedback

Feedback from the teacher plays an important role in supporting student engagement online, and as Ertmer et al. (2007) stated about feedback, it should be given quickly to online students in order to keep them engaged. There was evidence also that appeared consistent with Hattie and Timperley's (2007) findings that feedback relating to the task had the greatest effect on student engagement, particularly cognitive engagement. This is likely due to the feedback giving students tangible advice on what to work on either in the current or a future activity. Teachers need to practice giving effective feedback that is focused on the task and the processes around it. Within the feedback seen in this study, there was some consistency seen with the findings of Hattie and Timperley (2007), that simply praising students with a "great work" or similar comment did little for student engagement. Praise of students may help to increase the emotional engagement of a student as it makes them feel good, but it does not help to increase cognitive engagement.

Peer feedback through the discussion forums was also seen to help increase cognitive engagement of students. This is consistent with the findings of Reese-Durham (2005). However, it is noted that training needs to be given to students on how to write appropriate feedback that is beneficial to the recipient (Gielen et al., 2010).

6.2.5 Summary

This study has found that there are several components that promoted online student engagement. These are: working outside of the LMS; the nature of activities; learning communities; and feedback. These have been described in the preceding sections. The next section considers the implications of the conclusions drawn.

6.3 Implications

A number of implications for practice have been identified as a result of this study for the distance education school where it took place and for the teachers at the school. The

implications raised here may also be relevant to the wider education community depending on the similarity with the context investigated here. The implications are outlined below.

6.3.1 Implications for the school

This study has highlighted the need for the distance education school to consider how it offers teaching and learning to students. With students and teachers within this study suggesting they prefer to work outside of the LMS, the school would benefit from considering what external tools it is willing and able to support. If the school wants to use Web 2.0 tools, then training and documentation needs to be available to teachers and students on how to use these tools. The school also needs to consider making it mandatory for teachers to implement Web 2.0 tools in their teaching in order to ensure uptake. The school could develop a list of tools external to the LMS that it is willing to support from both a technical and pedagogical perspective. The technical support could come through expert users of the tool who could help train teachers and problem solve some of the issues. The pedagogical support could come through curriculum experts to work with teachers in order to help them develop appropriate ways to conduct teaching and learning using the tool. As a result teachers would be able to implement the use of the tools appropriately for student learning.

6.3.2 Implications for teachers

Teachers of online courses need to consider student engagement as they design their courses and learning activities. Developing an online environment where the students feel safe to contribute their thoughts and ideas is necessary to increase emotional engagement. This can be done through the design of learning activities that encourage the development of social presence and collaboration. Social presence and collaboration can be developed through careful planning of interactions between students. Introductory activities that require students to share a little about themselves were seen in this study as effective in increasing social presence. Teachers may need to work closely with individual students to help encourage collaboration. Guidelines may need to be developed around appropriate online behaviour of students to help ensure a safe environment (Redecker et al., 2009). Nurturing a safe online environment also helps to build a learning community where students can share and support each other. Giving students opportunities to be creative in

activities, whether inside or external to the LMS is also an important consideration. The students in this study identified creativity and challenging activities as what they look for in online activities. Teachers need to consider developing activities that challenge students and allow them to be creative as this appears to increase their cognitive engagement, however consideration needs to be made to ensure there is a range of activities to cater for the differing academic needs of the class (Burger et al., 2012; Ministry of Education, 2008). Teachers need to develop activities that develop social presence from early in the course as well as designing activities that target the three types of student engagement. Social presence can be nurtured through developing activities that encourage interaction amongst the students.

Teachers also need to ensure they are engaging in the learning activities through monitoring, motivating and facilitating the students through their learning as is suggested by Borup et al. (2013). They need to be reflecting on and evaluating the activity while it is taking place so that they can guide students appropriately to their learning outcomes. Without this, students in this study were seen to disengage from the activity or not take part at all.

6.4 Limitations

This study was conducted at a New Zealand distance education school which is set up and run in a very different manner to any other school in the country, and focused on fully online classes. While some of the findings may be transferable into other educational settings, the reader should be aware of the limitations that arise due to the unique nature of the school and the classes involved. It is up to the reader to decide on which conclusions can be transferred to other contexts.

This case study was exploratory and intrinsic in nature, serving a specific purpose for the researcher who is a member of staff at the school studied. Due to this, the case focused specifically on exploring what engages students online at this research site. The small number of participants—10 students and four teachers—means that the conclusions drawn may be limited to this particular case.

The classes that made up the case study were primarily fully online classes. They were not blended at all in the traditional sense as there was no required face-to-face contact between teacher and students or amongst students. There were some parts of the learning

programme for these classes that were paper-based, however these were not a part of this study. To this end, the conclusions that have been drawn as to the different types of engagement have remained focused on online learning.

6.5 Recommendations for future research

As a result of the findings of this study, the following have been recognised as areas for future research.

While this study recognised that activities that allowed students to be creative appeared to increase student engagement online, further research needs to be undertaken to look into whether different types of creative opportunities affect student engagement in different ways. For example, students can be creative in areas including art, music and thinking. There may be certain types of creativity or creative activities that increase student engagement online.

This study outlined that while both students and teachers perceive working outside of the LMS as a preferred way of learning online, that there were other aspects of the activity that were more important than *where* the student was working. This study recognised creativity, collaboration, level of difficulty and interest as aspects that increase student engagement. Further research could look for other aspects of activities that increase student engagement both within and externally from the LMS.

The focus of this study was on exploring online student engagement of a group of middle school students within a New Zealand distance education school. Further research could look at online student engagement across all students and teachers of the school based on the findings of this study. This could then be expanded into other New Zealand and overseas schools.

6.6 Final thoughts

Engaging students at a distance in online courses is a complex task. Multiple hurdles can arise: students not being able to log in to the LMS due to an internet outage; students not understanding the requirements within an activity; or being directed to the wrong resource through an incorrect link. All of these things are challenges to overcome. Teaching and

learning online however, gives great opportunity for students to be engaged in multiple ways.

In order to engage students online and keep them engaged throughout a course, it is necessary firstly to ensure that the emotional wellbeing of the student is considered. Engaging students emotionally through developing a safe and supportive environment online, where each member of the learning community is seen as a real person through establishing social presence, is a good place to start a course. By doing this, an informal support network can start to be established amongst the students, helping them remain engaged throughout the course. Through small-group work, this community of learners can also engage cognitively through questioning and learning from each other.

Challenging students with work set at appropriate levels will help to engage students cognitively, particularly if they are challenged through critical thinking and creativity. Giving students multiple opportunities to be creative in both artistic and thought-provoking activities will help to increase cognitive engagement. Simply creating fun and interesting activities will help to stimulate emotional engagement in students, and they are therefore likely to engage behaviourally in the activities.

Opportunities for students to work in a variety of different ways, whether it be offline, for example with pen and paper or outside, or online both within the LMS and using Web 2.0 tools outside of the LMS, will help to keep students interested and engaged. A variety of different activities enable students to find ways they prefer to work and give opportunity to personalise and customise their learning.

There is a need for teachers of online courses not only to consider student engagement as students participating in an activity, but also to consider how the activity is helping to engage students cognitively in order for them to learn most effectively. How students are expected to engage in an activity, whether it be emotionally, behaviourally, cognitively, or a combination of the different engagement types, should be considered when designing any activity. In this way, if students are expected to think critically, for example, then a teacher needs to design the activity so that this type of response is elicited from the student and then monitor, reflect and evaluate the activity to ensure this is happening.

It is evident in this section that many of the features used to engage students that have been seen throughout this study are similar to those that occur in traditional face-to-face

settings. This suggests that for students of this age, they need nurturing and guiding in their learning regardless of the mode of delivery. Features that are used in face-to-face teaching are transferable to some degree in online learning, however the way they are enacted can be quite distinct. It is very important to ensure that students feel connected to each other and the teacher when learning online to avoid feelings of isolation. It is important also, for teachers to offer multiple opportunities through a variety of activities to help ensure student engagement.

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8 Appendices

8.1 Letter to school

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
TE KUPENGA O TE MĀTAURANGA

[redacted]

Exploration of online activities that engage New Zealand middle school students

Dear [redacted]

I, Nathaniel Louwrens, am currently studying towards a Master of Education with an e-learning endorsement at Massey University. I am researching what components of online activities middle school students find most engaging.

I am writing this letter asking your permission to conduct my research at [redacted].

Carrying out this research should benefit [redacted], its teachers and its students. Benefits to [redacted] and the teacher participants are that they will have a deeper understanding of the components of online activities that encourage greater student engagement. This will enable them to choose appropriate online activities that engage their students. A benefit to the student participants is the possibility of higher quality online courses being made available to them in their future studies. Participation in the study may also give the students a greater self-awareness of what engages them in their online studies which may, in turn, improve their personal engagement in their future studies.

The following is a detailed description of the intended study. Please take the time to read through it before considering my request.

Project Description and Invitation
The aim of the project is to determine the components of online activities that lead to student engagement. By carrying out this project, it is hoped to find out why students choose to engage in some activities and not in others. The study will take place in the first 5 weeks of Term 3 (16 July 2012 – 17 August 2012).

Participant Identification and Recruitment
The teachers of the three Te Ara Hou online classes will be invited to participate in the study. If they agree, they will be asked by the researcher to put up a posting in the Online Teaching and Learning Environment (OTLE) inviting interested students to make contact with the

researcher via email for more information about the study. All students in the three classes will be invited to participate in the study.

The study is not evaluating teaching practices, but rather it is looking specifically at the components of online activities that engage students. The study is exploratory in nature. The intention of the study is to help inform the improvement of future online teaching practices.

Whether the students choose to take part in the study or not will not have an effect on their studies at [redacted]. Only the researcher will know who has chosen to participate.

Project Procedures
The project will take place in two stages.

Stage 1: In the first stage, student participants will be asked to complete two questionnaires using SurveyMonkey. The link for each questionnaire will be emailed to the students at the completion of two separate teaching and learning activities to find out what components of the activity encouraged the students to engage or not engage in it. The first questionnaire will also be used to gather some background information about the students for describing the group in each case study and will give students an opportunity to indicate whether or not they would be prepared to be interviewed by the researcher. Each questionnaire should take approximately 25 minutes to complete.

Stage 2: In the second stage, up to 12 students will be asked to be interviewed about their engagement in an activity. The 12 students will be chosen from those that have indicated a willingness to be interviewed in the first questionnaire. The students will be selected based on an even spread of students across the cohorts; geographical spread; number of years learning online; gender mix; and spread in the level of engagement in the two activities.

Teacher participants will be asked to be interviewed at a time that best suits them to hear their perception of the components of online activities that engages students.

Both student and teacher interviews will take place over Skype and will be audio recorded given appropriate consent from the participants.

If permission is granted by [redacted], the teachers and student participants, the work that students have completed relating to the two activities will also be collected for analysis to compare with the comments made in the questionnaires and interviews. Online statistical data on student activity from the OTLE will also be accessed if permission is given by [redacted] and student participants.

Complete quotes or excerpts of discussion posts and comments made in questionnaires and interviews may be used in publications if permission is given by the individual participants.

Possible Conflicts of Interest
The researcher is an employee of [redacted]
A conflict of role is unlikely to occur as the outcomes of the research should allow for the school to move forward in e-learning. Any potential conflicts arising will be discussed and worked through with my immediate Manager.

The researcher is a colleague to the teacher participants
The researcher is not a teacher of any of the online courses and does not currently work with any of the potential participants in any way. The researcher also does not have any authority

over these colleagues. Any conflicts arising will be discussed and worked through with the colleague and our Managers.

The researcher is a possible future teacher of the student participants
It is unlikely that there will be a conflict during the research period. Any future potential conflicts will be discussed and worked through with the students, parents and the Senior Teacher or Curriculum Leader of the course in which I am teaching the student. One possible outcome could be that the student is given another teacher for that course.

The researcher is the Senior Teacher of E-learning at [redacted]
The researcher in no way has a managerial relationship with his colleagues. It will be made clear that he is not researching their effectiveness as a teacher but rather looking at online student engagement. Any conflicts arising will be discussed and worked through with the individuals concerned and our Managers.

Data Management
Data collected will be analysed and used to form the basis of a thesis for the Master of Education. All data will be stored securely on the researcher's personal computer. Paper-based data will be stored securely in the researcher's office.

At the completion of the project, all electronic data will be copied onto CDs and removed from the researcher's computer. The CDs and all paper-based data will be stored securely for five years with the Chief Supervisor. At the end of the five years, the Chief Supervisor will have the data securely destroyed or disposed of.

All participants will be given the opportunity to receive a summary of the project findings at its conclusion. The researcher will email all participants at the end of the project when the findings are available.

Participants will not be anonymous to the researcher due to comparisons being made between the questionnaire and interview data with the actual data from the learning environment. However, no participants will be identified in any publications. The identity of student participants taking part in the study will not be made known to the teachers.

Though no specific identification of [redacted] will be made in any publications, it is important to note that as [redacted] is the only distance education school of its kind in New Zealand it may be possible to identify it. Therefore, anonymity cannot be guaranteed.

Participant's Rights
Participants are under no obligation to accept this invitation. If they decide to participate, they have the right to:
- *decline to answer any particular question;*
- *withdraw from the study up to 17 August 2012;*
- *ask any questions about the study at any time during participation;*
- *provide information on the understanding that your name will not be used unless you give permission to the researcher;*
- *be given access to a summary of the project findings when it is concluded.*

Project Contacts

Researcher

Nathaniel Louwrens research@narelo.com [redacted]

Supervisors

Dr Maggie Hartnett m.hartnett@massey.ac.nz [redacted]
Dr Peter Rawlins p.rawlins@massey.ac.nz [redacted]

If you are willing to give your permission to conduct this research at [redacted], I would also like to request the following in order to conduct the research:

- Permission to approach the teachers to participate in the study.
- Access to the three Te Ara Hou courses in the Online Teaching and Learning Environment (OTLE) assuming I receive permission from the appropriate teachers of the courses.
- Access to the reports on student online activity from the OTLE for those courses.
- 30 minutes of work time to interview each of the teacher participants.
- Up to 80 minutes of time for each student participant (25 minutes for each of 2 questionnaires and 30 minutes for an interview).

Thank you for your time in considering my request. If you have any questions about the project, please do not hesitate to contact me or my research supervisors.

Yours sincerely

Nathaniel Louwrens

Committee Approval Statement

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 12/18. If you have any concerns about the conduct of the research, please contact Dr Nathan Matthews, Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 8729, email humanethicsouthb@massey.ac.nz.

8.2 Teacher information sheet

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
TE KUPENGA O TE MĀTAURANGA

Exploration of online activities that engage New Zealand middle school students

INFORMATION SHEET FOR TEACHERS

Researcher Introduction
Nathaniel Louwrens is the Senior Teacher of E-Learning at [redacted]. He is currently studying full-time towards a Master of Education at Massey University. Nathaniel is carrying out this study as a requirement for his research thesis.

Project Description and Invitation
The aim of the project is to determine the components of online activities that lead to student engagement. By carrying out this project, it is hoped to find out why students choose to engage in some activities and not in others. The study will take place in the first 5 weeks of Term 3 (16 July 2012 – 17 August 2012).

I would like to invite you to participate in this study and help develop a better understanding of what engages student in e-learning. Please read through the following information and if you would like to take part then complete and return the consent form.

Participant Identification and Recruitment
You, along with the other teachers of the three Te Ara Hou online classes have been invited to participate in the study. If you agree, you will be asked to put up a posting in the Online Teaching and Learning Environment (OTLE) firstly introducing me and explaining what I'm doing, and then inviting interested students to make contact with me via email for more information about the study. All students in the Te Ara Hou classes will be invited to participate in the study.

The study is not evaluating teaching practices, but rather it is looking specifically at the components of online activities that engage students. The study is exploratory in nature. The intention of the study is to help inform the improvement of future online teaching practices.

Project Procedures
Student participants will be asked to complete two questionnaires using SurveyMonkey. The link for each questionnaire will be emailed to the students at the completion of two separate teaching and learning activities to find out what components of the activity encouraged the students to engage or not engage in it. The first questionnaire will also be used to gather some background information about the students for describing the group in each case study. Each questionnaire should take approximately 25 minutes to complete.

Up to 12 students across the online Te Ara Hou classes will be asked to be interviewed about their engagement in an activity. The 12 students will be chosen from those that have indicated a willingness to be interviewed in the first questionnaire.

You, and the other teacher participants will be asked to be interviewed at a time that best suits you after the second activity has been completed to hear your perception of the components of online activities that engage students. This will be your only required involvement in the project other than assisting me to make students aware of the study.

Teacher interviews will take place at [redacted] and will be audio recorded. Tape transcripts of the recordings will be made available to you to check for accuracy before analysis.

Complete quotes or excerpts of discussion posts and comments made in questionnaires and interviews may be used in publications. By completing the consent form you are giving permission to publish your comments. You will never be identified in any publications.
By giving consent to participate in the study you are allowing the researcher access into your Te Ara Hou online course in OTLE.

Possible Conflicts of Interest

Although I am not a teacher of any of the online courses and do not currently work with any of the potential participants in any way, I am still employed by [redacted] and am therefore your colleague. If you have any issues surrounding my carrying out this research at any time then we will discuss and work through these with our Managers.

I am the Senior Teacher of E-learning at [redacted]

This position is mostly one of advice and guidance in regards to e-learning. I am not researching your effectiveness as a teacher but rather looking at online student engagement. If any conflicts arise we will discuss and work them through with our Managers.

Data Management

Data collected will be analysed and used to form the basis of a thesis for the Master of Education. All data will be stored securely on my personal computer. Paper-based data will be stored securely in my office.

At the completion of the project, all electronic data will be copied by me onto CDs and removed from the computer. The CDs and all paper-based data will be stored securely for five years with the Chief Research Supervisor. At the end of the five years, the Chief Supervisor will have the data securely destroyed or disposed of.

You, as a participant have a right to access a summary of the project findings. These will be available at the conclusion of the research project by making a request via email to me.

You will not be anonymous to the researcher due to being a work colleague. However, you will not be identified in any publications in relation to this project.

Participant's Rights

You are under no obligation to accept this invitation. If you decide to participate, you have the right to:

- *decline to answer any particular question;*
- *withdraw from the study up to 17 August 2012;*
- *ask any questions about the study at any time during participation;*
- *provide information on the understanding that your name will not be used unless you give permission to the researcher;*
- *be given access to a summary of the project findings when it is concluded.*

Project Contacts

Researcher
Nathaniel Louwrens research@narelo.com [redacted]

Supervisors
Dr Maggie Hartnett m.hartnett@massey.ac.nz [redacted]
Dr Peter Rawlins p.rawlins@massey.ac.nz [redacted]

You are encouraged to contact the researcher and/or supervisors if you have any questions about the project.

Committee Approval Statement

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 12/18. If you have any concerns about the conduct of the research, please contact Dr Nathan Matthews, Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 8729, email humanethicsouthb@massey.ac.nz.

8.3 Teacher consent form

Exploration of online activities that engage New Zealand middle school students

PARTICIPANT CONSENT FORM – INDIVIDUAL TEACHER

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I agree/do not agree to the interview being sound recorded.

I wish/do not wish to have my recordings returned to me.

I agree to participate in this study under the conditions set out in the Information Sheet.

Signature: ..... **Date:** .....

Full Name - printed .....

8.4 Research advertisement

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
TE KUPENGA O TE MĀTAURANGA

Exploration of online activities that engage New Zealand middle school students

Do you like learning online? We want to make your online learning experience even better!

Nathaniel Louwrens is carrying out a project to find out what it is about different online activities that makes you want to engage in them.

WE WANT TO HEAR WHAT YOU HAVE TO SAY

If you think you might be interested in having your say then please email Nathaniel for more information.

research@narelo.com

Your involvement in this study will not affect your studies at [redacted]. Your teacher will not know who has chosen to participate or not. Responding to this advertisement does not mean you have decided to be a part of the study.

8.5 Student and caregivers information

MASSEY UNIVERSITY
COLLEGE OF EDUCATION
TE KUPENGA O TE MÂTAURANGA

Exploration of online activities that engage New Zealand middle school students

INFORMATION SHEET FOR STUDENTS AND THEIR PARENT/GUARDIAN

Who is the researcher?
I, Nathaniel Louwrens am the Senior Teacher of E-learning at [redacted] and I am currently studying full-time towards a Master of Education through Massey University. I am carrying out this project as a part of the Master of Education. I am on study leave at the moment so I am not currently teaching.

What is the study about?
I want to find out what it is about online activities that either makes you want to engage in them or not engage in them. The study will look at what things you prefer about various online activities and investigate why you feel this way.

Invitation to participate
You are invited to participate in this project which will take place during the first weeks of Term 3 (16 July – 17 August 2012). If you think you may be interested in taking part in the project, please read through the information below and complete and return the consent form. Your teacher will not be told whether or not you have chosen to take part in the study. Whether you choose to participate or not, your studies will not be affected as a result of this project.

What will I be asked to do?
If you choose to take part in the study you will see there are two parts to it.

In the first part you will be asked to complete two questionnaires. The questionnaires will be similar and will ask you questions about an online activity you will have just completed. Each questionnaire will take you about 25 minutes to complete.

One of the questions in the first questionnaire will ask if you are willing to be interviewed for the study – this is the second part of the study. If you indicate that you are willing, you may be asked to be interviewed in more depth about a particular online activity. The interview will take no more than 30 minutes and will take place using Skype. Only 12 people will be interviewed. They will be chosen from those who have said they are happy to be interviewed based on things like an even mix of boys and girls; how long you have been learning online and where you live.Everyone who is interviewed will receive a tape transcript (written copy) of the questions they were asked and the answers they gave to check over to ensure they are accurate.

You will be able to complete the questionnaires even if you don't want to be interviewed.

After you have completed the online activities I will also look at the work you did in the Online Teaching and Learning Environment (OTLE) relating to them. I will be looking at how you have engaged with those activities.

Complete quotes or parts of discussion posts and comments made in questionnaires and interviews may be used in publications. By completing the consent form you are giving your permission for me to publish your comments. You will never be identified in any publication.

By giving your consent to participate in the study you are giving your permission for me to view your work in your online Te Ara Hou class on OTLE.

Who else will be involved?
All students in the online Te Ara Hou classes have been invited to participate. Anyone who chooses to participate will be asked to complete the questionnaires. The teachers of the Te Ara Hou courses have also been invited to

participate however, they will not be aware of which students have and have not chosen to participate in the study.

What are the benefits of the research?
As a result of being a part of the study, you may discover what motivates you to take part in online activities. This could help you in your future online studies by giving you a greater awareness of what you need to work on to benefit from the activities given for you to complete.

The findings of the research will be shared amongst teachers, schools and other institutions to help guide them into preparing activities that will encourage engagement. You will never be identified in any publications. Your identity will remain anonymous to everyone other than me.

What happens to the data collected?
The information you provide in the questionnaires and interviews will help me to see what it is about the activities that make you want to engage in them.

Data will be securely stored on my personal computer during the project. At the end of the project, all data will be transferred to CDs and stored securely by my research supervisor. After five years, the data will be securely disposed of or destroyed by my supervisor.

At the end of the project I will email you a summary of what I have found out in the research project.

Confidentiality and issues
I will not use your name in any publications or presentations about this project. Your identity will only be known to me. You will be assigned a code that I will write on anything you send to me or that I use from the discussion forum. This is how I will know it is you, but no-one else will know.

I am a teacher at [redacted] and may teach you in the future. If I do become your teacher in the future and you're not happy about it then you cantalk with the Senior Teacher or Curriculum Leader of the course at that time to see if other arrangements can be made.

Project Contacts

Researcher
Nathaniel Louwrens research@narelo.com [redacted]

Supervisors
Dr Maggie Hartnett m.hartnett@massey.ac.nz [redacted]
Dr Peter Rawlins p.rawlins@massey.ac.nz [redacted]

If you have any questions about the project then you or your parents can contact me or my supervisor's. You can phone me, email me or send me a text message if you would like me to contact you.

What are my rights?
You are under no obligation to accept this invitation. If you decide to participate, you have the right to:

- *decline to answer any particular question;*
- *withdraw from the study before 17 August 2012;*
- *ask any questions about the study at any time during participation;*
- *provide information on the understanding that your name will not be used unless you give permission to the researcher;*
- *be given access to a summary of the project findings when it is concluded.*
- *ask for the recorder to be turned off at any time during the interview.*

Committee Approval Statement
This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 12/18. If you have any concerns about the conduct of the research, please contact Dr Nathan Matthews, Chair, Massey University Human Ethics Committee: Southern B, telephone 06 350 5799 x 8729, email humanethicsouthb@massey.ac.nz.

8.6 Student and caregivers consent form

Exploration of online activities that engage New Zealand middle school students

PARTICIPANT CONSENT FORM – INDIVIDUAL STUDENT

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I agree/do not agree to allow the researcher access to my work in the Online Teaching and Learning Environment (OTLE).

I agree/do not agree to the interview being sound recorded.

I wish/do not wish to have my recordings returned to me.

I agree to participate in this study under the conditions set out in the Information Sheet.

Student

Signature: ..... **Date:** .....

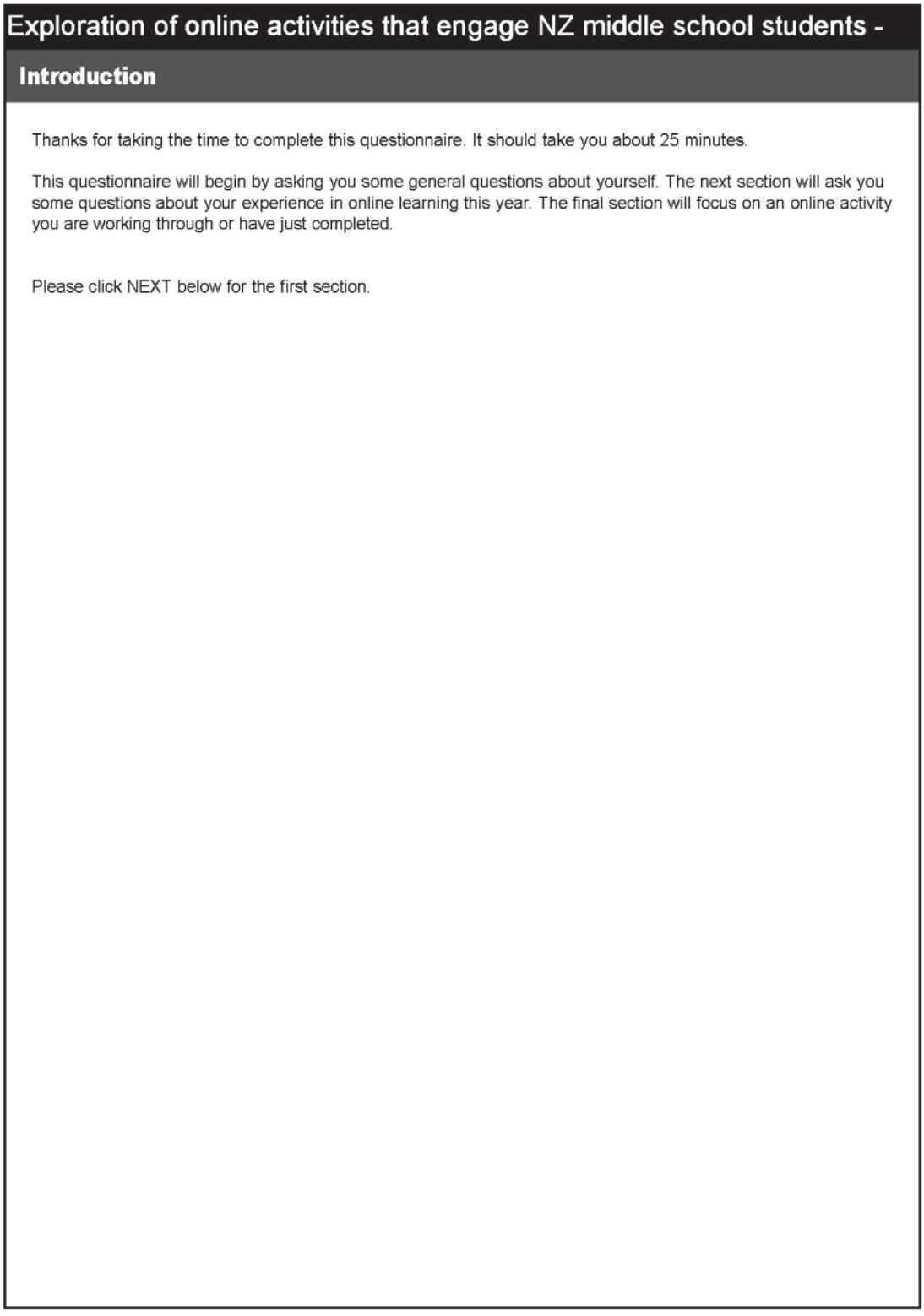
Full Name - printed .....

Parent/Guardian

Signature: ..... **Date:** .....

Full Name - printed .....

8.7 Class 1 & 2 questionnaire



Exploration of online activities that engage NZ middle school students -

Introduction

Thanks for taking the time to complete this questionnaire. It should take you about 25 minutes.

This questionnaire will begin by asking you some general questions about yourself. The next section will ask you some questions about your experience in online learning this year. The final section will focus on an online activity you are working through or have just completed.

Please click NEXT below for the first section.

Page 1

Exploration of online activities that engage NZ middle school students -

Section 1: Personal Information

Please complete the following information about yourself.

***1. Name (first and last)**

2. Age

3. Gender

- ◯ Male
- ◯ Female

4. School Year level

- ◯ 7
- ◯ 8
- ◯ 9
- ◯ 10

5. Ethnicity

Other (please specify)

6. How long have you been learning online?

- ◯ Less than 1 month
- ◯ 1-3 months
- ◯ 3-6 months
- ◯ 6 months - 1 year
- ◯ 1-2 years
- ◯ 2+ years

Exploration of online activities that engage NZ middle school students -

Section 2: Online Learning 2012

7. During the current school year, how often have you done the following?

	Very often	Often	Sometimes	Never
Attempted an online learning activity.	○	○	○	○
Completed an online learning activity.	○	○	○	○
Shared your thoughts or made comments in an online discussion.	○	○	○	○
Replied to another students comment in an online discussion.	○	○	○	○
Asked questions about another student's discussion comment or online work.	○	○	○	○
Received feedback from your teacher.	○	○	○	○
Received feedback from another student.	○	○	○	○
Given feedback to another student.	○	○	○	○
Worked on an online learning activity in a group.	○	○	○	○
Worked on an online learning activity on your own.	○	○	○	○
Received help from your teacher.	○	○	○	○
Received help from another student.	○	○	○	○
Given help to another student.	○	○	○	○
Asked for help online.	○	○	○	○
Had difficulty learning online.	○	○	○	○
Made a presentation online.	○	○	○	○
Created something online (eg. a webpage or using an online tool such as Voicethread, Wiki, YouTube)	○	○	○	○

Exploration of online activities that engage NZ middle school students -

8. Select all of the different types of online activity that you have been given this year. Please add any others you can think of.

- [ ] Quiz
- [ ] Discussions
- [ ] Online activity outside of OTLE (eg. wiki, Google Doc, Voicethread, other online tool)
- [ ] Individual assignment placed in OTLE dropbox
- [ ] Group assignment placed in OTLE dropbox
- [ ] Individual activity
- [ ] Group activity

Other (please specify)

9. From the list in the last question (question 8), write down in order of preference your 3 preferred types of activity.

1.
2.
3.

10. Why did you choose the activity that you put as your most preferred (number 1) in the question above?

- [ ] Easy
- [ ] Quick to do
- [ ] Challenging
- [ ] Makes me think
- [ ] Allows me to work in a group
- [ ] Allows me to work on my own
- [ ] Allows me to discuss with others
- [ ] Lets me work my own way
- [ ] Allows me to be creative

Other (please specify)

Exploration of online activities that engage NZ middle school students -

Section 3: Online activity

You were recently given the "Write as you are" writing activity in OTLE.
Please answer the following questions about your experience with this activity.

11. Did you make an attempt at the activity?
If you did not attempt, or did not complete it, please explain why.

(Remember, your teacher will not see or be told of your answers. Personal information is not required.)

Did not attempt	Made a start	Did a lot but did not complete	Completed
○	○	○	○

Explanation

12. Was there something about the activity that made you want to attempt it?
If so, what was it and why did it make you want to attempt it?

- ○ Yes
- ○ No
- ○ I didn't attempt it

Explanation

13. On the scale below indicate how much you wanted to do the activity.

I did not want to do the activity at all	I wanted to do the activity a little bit	I wanted to do the activity a lot	I really wanted to do the activity
○	○	○	○

14. On the scale below indicate how much effort you put into the activity.

I put no effort into the activity	I put in a little bit of effort	I put in a good amount of effort	I put in a lot of effort
○	○	○	○

15. How much time did you spend on the activity?

16. What did you learn in the activity?

Exploration of online activities that engage NZ middle school students -

17. What helped you to learn this?

Exploration of online activities that engage NZ middle school students -

Thank you

This is the end of the first questionnaire.
Thank you for taking the time to complete it.

- Nathaniel Louwrens

8.8 Class 3 questionnaire questions

Exploration of online activities that engage NZ middle school students -

Introduction

Thanks for taking the time to complete this questionnaire. It should take you about 25 minutes.

This questionnaire will begin by asking you some general questions about yourself. The next section will ask you some questions about your experience in online learning this year. The final section will focus on an online activity you are working through or have just completed.

Please click NEXT below for the first section.

Page 1

Exploration of online activities that engage NZ middle school students -

Section 1: Personal Information

Please complete the following information about yourself.

***1. Name (first and last)**

2. Age

3. Gender

- ◯ Male
- ◯ Female

4. School Year level

- ◯ 7
- ◯ 8
- ◯ 9
- ◯ 10

5. Ethnicity

Other (please specify)

6. How long have you been learning online?

- ◯ Less than 1 month
- ◯ 1-3 months
- ◯ 3-6 months
- ◯ 6 months - 1 year
- ◯ 1-2 years
- ◯ 2+ years

Exploration of online activities that engage NZ middle school students -

Section 2: Online Learning 2012

7. During the current school year, how often have you done the following?

	Very often	Often	Sometimes	Never
Attempted an online learning activity.	○	○	○	○
Completed an online learning activity.	○	○	○	○
Shared your thoughts or made comments in an online discussion.	○	○	○	○
Replied to another students comment in an online discussion.	○	○	○	○
Asked questions about another student's discussion comment or online work.	○	○	○	○
Received feedback from your teacher.	○	○	○	○
Received feedback from another student.	○	○	○	○
Given feedback to another student.	○	○	○	○
Worked on an online learning activity in a group.	○	○	○	○
Worked on an online learning activity on your own.	○	○	○	○
Received help from your teacher.	○	○	○	○
Received help from another student.	○	○	○	○
Given help to another student.	○	○	○	○
Asked for help online.	○	○	○	○
Had difficulty learning online.	○	○	○	○
Made a presentation online.	○	○	○	○
Created something online (eg. a webpage or using an online tool such as Voicethread, Wiki, YouTube)	○	○	○	○

Exploration of online activities that engage NZ middle school students -

8. Select all of the different types of online activity that you have been given this year. Please add any others you can think of.

- [ ] Quiz
- [ ] Discussions
- [ ] Online activity outside of OTLE (eg. wiki, Google Doc, Voicethread, other online tool)
- [ ] Individual assignment placed in OTLE dropbox
- [ ] Group assignment placed in OTLE dropbox
- [ ] Individual activity
- [ ] Group activity

Other (please specify)

9. From the list in the last question (question 8), write down in order of preference your 3 preferred types of activity.

1.
2.
3.

10. Why did you choose the activity that you put as your most preferred (number 1) in the question above?

- [ ] Easy
- [ ] Quick to do
- [ ] Challenging
- [ ] Makes me think
- [ ] Allows me to work in a group
- [ ] Allows me to work on my own
- [ ] Allows me to discuss with others
- [ ] Lets me work my own way
- [ ] Allows me to be creative

Other (please specify)

Exploration of online activities that engage NZ middle school students -

Section 3: Online activity

You were recently given the "Showcase a country" wiki/presentation activity in OTLE.
Please answer the following questions about your experience with this activity.

11. Did you make an attempt at the activity?
If you did not attempt, or did not complete it, please explain why.

(Remember, your teacher will not see or be told of your answers. Personal information is not required.)

Did not attempt ○ Made a start ○ Did a lot but did not complete ○ Completed ○

Explanation

12. Was there something about the activity that made you want to attempt it?
If so, what was it and why did it make you want to attempt it?

○ Yes
○ No
○ I didn't attempt it

Explanation

13. On the scale below indicate how much you wanted to do the activity.

I did not want to do the activity at all ○ I wanted to do the activity a little bit ○ I wanted to do the activity a lot ○ I really wanted to do the activity ○

14. On the scale below indicate how much effort you put into the activity.

I put no effort into the activity ○ I put in a little bit of effort ○ I put in a good amount of effort ○ I put in a lot of effort ○

15. How much time did you spend on the activity?

16. What did you learn in the activity?

Exploration of online activities that engage NZ middle school students -

17. What helped you to learn this?

Exploration of online activities that engage NZ middle school students -

Thank you

This is the end of the first questionnaire.
Thank you for taking the time to complete it.

- Nathaniel Louwrens

8.9 Transcript release form

Exploration of online activities that engage New Zealand middle school students

AUTHORITY FOR THE RELEASE OF TRANSCRIPTS

I confirm that I have had the opportunity to read and amend the transcript of the interview(s) conducted with me.

I agree that the edited transcript and extracts from this may be used in reports and publications arising from the research.

Signature: ..... **Date:** .....

Full Name - printed .....

A11

8.10 Student interview schedule

Student interview questions/starters

1. Tell me about your favourite online activity you have been given.

a. What was it about this activity that made you want to do it?

Prompts

i. Scaffolding - breaking up an activity into small parts
ii. Choices given within the activity
iii. Relevance of activity
iv. Interest in activity
v. Discussions
vi. Challenging/easy
vii. Group/individual

b. What did you learn from doing that activity?

c. How did you learn it?

Prompts

i. Through help or discussion with others (students/teachers)
ii. Through your own research
iii. Through working together with other students

2. Tell me about your least favourite online activity that you have been given.

a. Did you attempt or complete the activity?

b. What was it about this activity that made you not like it?

Prompts

i. Support
ii. Resources
iii. Time to do the activity
iv. Prompt feedback
v. Scaffolding
vi. Choices given within the activity
vii. Relevance of activity
viii. Interest in activity
ix. Discussions
x. Challenging/easy

xi. Group/individual

c. What did you learn during that activity?

d. How did you learn it?

Prompts

i. Through help or discussion with others (students/teachers)

ii. Through your own research

iii. Through working together with other students

3. What are some things in an activity that help you to learn online?

Prompts

i. Support from teacher/students

ii. Relevance/interest

iii. Scaffolding

iv. Discussions with teacher/students

v. Quick feedback/response from teacher

4. Tell me about the things that make learning difficult online.

Prompts

i. Connection

ii. Sharing computer/internet

iii. Too much to read

iv. Reading on screen

v. Lack of immediate response

5. What does your teacher do to encourage or motivate you to work through an activity?

6. If you could tell your teacher one or two things that help motivate or encourage you, what would it be?

Prompts

i. Support

ii. Deadlines

iii. Feedback

iv. Interesting activities

v. Relevant activities

7. Is there anything else you would like to share with me about your online learning experience?

8.11 Teacher interview schedule

Teacher interview questions/starters

1. Tell me about your online course.
    a. What does it look like?
    b. How do you set it up at the beginning of the year to get it running successfully?
    c. What do you ask the students to do?
    d. What do you, as the teacher, do?
2. Tell me about the culture of your online course and how it has been developed throughout the year.
3. What does student engagement look like to you in your online course?
    a. How can you tell if a student is or is not engaged?
4. Tell me about what have you done to foster student engagement in your course?
    a. How successful has it been?
5. Tell me about an activity that you have given your students that has produced a high level of engagement.
    a. In the activity that you have just described, what do you think were the causes of this high level of student engagement?
6. Tell me about an activity that you have given your students where there was a lower level of engagement.
    a. In the activity you have just described, what do you think were the causes of this lower level of student engagement?
7. In your experience what effect have the following things had on student engagement levels?
    a. Teacher feedback/feedforward
    b. Scaffolding in activities
    c. Encouraging interaction between students
    d. Developing trusting relationships / safe environment
    e. Giving choices to students
8. Do you have any other comments about student engagement in online activities that you would like to make or you think are important?