ACTION FOR E-LEARNING IN THE CLASSROOM: A SMALL STUDY ON A PROFESSIONAL DEVELOPMENT INITIATIVE

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Abstract

This small, qualitative study aimed to investigate teachers’ experiences and perceptions about implementing e-Learning from professional development programmes into their classroom practices. Furthermore, it explored teachers’ experiences and perceptions of using e-Learning in the classroom and how a professional development programme could better support teachers to incorporate e-Learning approaches in their learning programs. As part of this study, a literature review was undertaken to identify specific professional development aspects that had been identified as being effective in increasing the use of e-Learning in the classroom.

Two professional learning and development workshop programmes were designed and implemented using the aspects that had been identified during the literature review. The aspects selected for the professional development workshop programmes were active learning, relevance to individual teachers’ requirements, collaboration, reflection and time. Five participants took part in the research study, and their experiences and perceptions were recorded using individual semi-structured interviews and questionnaires.

The findings indicated that participants viewed their e-Learning confidence and capability as low to moderate. In addition, evidence from the study, in the form of the questionnaires and semi-structured interviews, suggested that the strategies used in this professional development initiative could lead to positive changes in the use of e-Learning in the classroom. Furthermore, the study identified that equipment and infrastructure restrictions, ineffective professional development programmes and lack of teacher confidence and capability in e-Learning were contributing factors that prevented increased use of e-Learning within the classroom environment.
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CHAPTER ONE – INTRODUCTION

1.1 Introduction

Educational reform and change, in the context of teacher pedagogy, use of digital technology, new learning environments and curriculum diversity, and delivery is now occurring within many schools (Wright, 2010; Timperley, Wilson, Barrar & Fung, 2008; Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur & Sendurur, 2012). There now exists an opportunity, and need, to provide effective professional learning, support and guidance to enable teachers to make changes to their practice that promotes and encourage a more authentic and future focused learning environment (Timperley et al. 2008). One that focuses on not just how to use specific e-Learning resources and tools, as these change quickly, but one that enables the teacher to select suitable pedagogical strategies that complement the use of e-Learning in the classroom and provide an authentic and effective learning environment that engages the student and ultimately leads to improved student outcomes (Bolstad & Gilbert, 2006; Fullan, 2013).

The Ministry of Education (2015) has been clear to define that “Best practice e-learning enables accessible, relevant, and high-quality learning opportunities that improve student engagement and achievement”. An issue confronting many schools is the need to advance teachers’ best practice e-learning competencies in ways that result in a positive effect on student outcomes (Timperley, Wilson, Barrar & Fung, 2008).

This thesis seeks to investigate teacher experiences and perceptions regarding implementing e-Learning from professional development programmes into their classroom practice. In addition, the study considers the benefits of an in-house professional development workshop series and whether it can lead to changes and the use of e-Learning in the classroom.
1.2 Rationale

Professional teacher learning programs are an important component in guiding and upskilling teachers to teach in a more future-focused manner and to make use of new technology and pedagogical practices (O’Riley, Amos, Copeland, Fidow, Langford, Newton & Vester, 2014).

This study provides a glimpse of an in-house professional development programme in the area of e-Learning. The literature review that supports the study identifies specific aspects that have been shown to be effective in the delivery of e-Learning professional development that leads to pedagogical changes and the use of e-Learning in the classroom.

The study also seeks to explore teachers’ current use and perception of e-Learning in the classroom and professional development e-Learning initiatives at one school in New Zealand. It is envisaged that this study may also contribute to future planning of e-Learning professional development initiatives in schools. Furthermore, the study provided an opportunity for a small group of teachers at the researchers’ school to collaborate and share perceptions, experiences and skills of using e-Learning in the classroom, and pedagogies that support learning with technology.

1.3 Research aim and guiding questions

The aim of this research is to investigate teacher experiences and perceptions regarding implementing e-Learning from professional development programmes into their classroom practice. It also aims to evaluate what aspects of a professional development and learning program could be of benefit to teachers when undertaking professional learning to enhance the use of e-Learning in their practice.

This study will draw conclusions based on literature and research-based findings. Recommendations could inform future implementation practices in the school and could be extended to other similar practices at the discretion of the reader.
The aim of this study is:

To investigate teacher experiences and perceptions regarding implementing e-Learning from professional development programmes into their classroom practice.

There are three research questions that guide this study. The questions are:

1. What are the current practices and perceptions of e-Learning for teachers at my school?

2. From a teacher perspective, can in-house professional development workshops in e-Learning lead to changes in the use of e-Learning in the classroom?

3. From teachers’ perspectives, what specific aspects best benefit them when undertaking professional learning to enhance the use of e-Learning in the classroom?

1.4 Thesis outline

Chapter One – Introduction
Chapter One introduces the topic of study. This chapter also includes the rationale for the research, sets out the research aims and questions, and concludes with an outline of the thesis.

Chapter Two – Literature review
In the literature review, a theoretical base for the research is formed. Key themes are identified in the literature on e-Learning and pedagogical approaches which include the barriers and challenges to e-Learning in schools and classroom learning, pedagogical approaches and e-Learning. Five aspects of professional development are selected to review in more detail as numerous research studies indicated that they had a significant effect on professional development that leads to improved changes in student learning outcomes.
Chapter Three – Methodology
Chapter Three, contains a description of the qualitative research employed for this project. In addition, it provides an explanation of the theoretical perspectives and a description of data collecting methods and analysis techniques. Furthermore, it contains a discussion of the validity and reliability of the research and provides evidence of how ethical issues were considered and addressed.

Chapter Four – The Study
This chapter contains details of the planning and preparations for the professional development workshop.

Chapter Five – Findings
Significant findings from the interviews and questionnaire are recorded in Chapter Five. The findings are organised under three areas identified in the data, namely, technical aspect, teacher aspect and professional development aspect. An overall summary completes the findings chapter.

Chapter Six – Discussion, conclusion and recommendations
In Chapter Six, the researcher discusses, with reference to the literature, the significant findings of the study, with a conclusion summarising the key points made in the discussion. Following this, several recommendations have been made based on the evidence from this study. This chapter closes with a reflection on the limitations and strengths of the study and provides a closing section on areas of further study.
CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction to literature review

This chapter outlines the literature review which forms the basis for the research project reported on in this thesis. Literature in the field of teacher professional development and e-Learning in the classroom was surveyed. Five sub-chapters were identified, e-Learning and the New Zealand Curriculum, barriers and challenges, pedagogical approaches that support e-Learning, and Teacher professional development and learning.

The teacher professional development and learning subchapter is further divided into active learning, collaboration, relevance to practice, time and reflection. These five aspects of professional development were selected because multiple research studies had indicated they have a significant effect on professional development that leads to improved changes in student learning outcomes.

2.2 e-Learning and the New Zealand Curriculum

E-Learning is defined by the New Zealand Ministry of Education as learning and teaching that is facilitated by or supported through the appropriate use of information and communication technology (ICT) (Ministry of Education, 2007). Information and Communication Technology (ICT), for example, internet, computers, smartphones and tablets can be used to communicate, create, disseminate, store and manage information. The national teaching document of New Zealand encourages schools to “explore not only how ICT can supplement traditional ways of teaching, but also how it can open up new and different ways of learning” (Ministry of Education, 2007, p.36). In view of such directives, many schools have invested heavily in new technology, and digital devices have become common amongst teachers, students and their families (Boyde, 2012; Zhao, Pugh, Sheldon & Byers, 2002).
There is a growing body of evidence to support the view that the use of digital technology in the classroom has the potential to improve the effectiveness of learning environments. Wright (2010) examined related literature from a range of different countries. Backed by this evidence, Wright (2010) formed the conclusion that not only did e-Learning have a positive effect on student achievement but studies had also shown that it could increase student engagement and levels of motivation. Falloon, Janson and Janson (2010) also formed the conclusion that students became more independent, engaged and motivated when they had the opportunity to learn digitally. Additionally, support is given by Sheehan and Nillas (2010) who demonstrated that when students were the essential clients of innovation, they were more occupied with learning, and they accomplished more elevated amounts of scientific comprehension. Further support is provided by Sheehan and Nillas (2010) who demonstrated that when students were the primary users of technology, they were more engaged in learning and attaining higher levels of mathematical understanding. Furthermore, Sheehan and Nillas (2010) concluded that technology was also found to be beneficial to developing students’ critical thinking skills.

2.3 Barriers and Challenges

Despite government support (Ministry of Education, 2007) and increasing research evidence (Wright, 2010) the usage of e-Learning and classroom teaching methods that elevate e-Learning appear sporadic in schools and classrooms in New Zealand. Educational specialists, for example, according to Ertmer et al. (2012), Herro (2015), and Zhao et al. (2002), have proposed that particular hindrances are counteracting actualising and maintaining utilisation of e-Learning in the classroom. Inadequate infrastructure, lack of available and suitable equipment, insufficient training and support, as well as individual teacher’s beliefs are some of the common barriers that have been identified. In a study carried out by Ertmer et al. (2012), two types of barriers were identified that influenced teachers’ successful use of using digital technology in the classroom, first-order barriers and second-order barriers. The first-order barriers included factors that are external to the teachers, such as resources, training and support. These types of barriers are also mentioned by Herro (2015) as one of the main ‘challenging’ factors that limit implementation of digital technologies into the
classroom. Herro (2015) also noted that by the mid-2000s access to technology resources began to increase, although the report does not specify if this means that schools had more access to resources within the school or if the issue of gaining access to the resources within the classroom had improved. This was a point raised by Zhao et al. (2002), who drew attention to the fact that a school could be well-resourced but a teacher could still find it challenging to get access to those resources.

The second-order barriers that Ertmer et al. (2012) report on are related to the teacher, for example, the teacher's beliefs about how students learn, as well as the teachers' perceived value of the use of technology in education. The research concludes that it is the second-order barriers that posed the greatest barrier for the successful implementation of digital technology in the classroom. Ertmer et al. (2012) suggest that the best way to bring more teachers on-board is to increase teachers' knowledge and skills in the area of e-Learning and this will result in teachers changing their attitudes and beliefs about the usefulness of digital technologies in the classroom. It will also give the teachers' more confidence to expand their own pedagogy and trial new digital technologies in their classroom. Danielle Herro (2015) identifies prohibitive policies, inadequate infrastructure, curriculum requirements and insufficient professional development as the main challenges that limit teacher and student digital and media learning experiences in the classroom. Clarke and Dede (2009) argue that for innovations to be sustainable they need to be supported by broad community participation, for example, policy changes and professional development, and the reform will not be successful if it is ‘tightly prescribed, ‘one size fits all’ change model, as this does not consider the individual teachers’ daily classroom conditions.

Songer, Lee and McDonald (2003) describe how teachers are able to customise an innovation to fit their needs without needing extensive support and guidance but to scale digital technology innovation to whole school action; this often requires assistance from other teachers and district administrators. The research summarises that developing the understanding to innovate with digital media in the classroom is time intensive and challenging, and makes a substantial impact which each teacher needs to consider their situation, alter beliefs about their roles, be flexible, rely on learning with and from students and participate within a broad community.
Research carried out by Zhao et al. (2002) into what conditions are needed for technology to be effectively integrated into the classroom to improve student learning, identified 11 factors that influenced the successful implementation of technology in the classroom. They further sub-grouped these 11 factors into three distinct groups. The first group, innovator, housed the innovator’s technological proficiency and the compatibility between the teachers’ pedagogical belief and the technology. The research concluded that the more aware a teacher was of their own pedagogical beliefs and the more reflective they were about their own practice then the more flexible and adaptable they were to classroom technology integration. The opposite was also shown, that is, when the teacher’s pedagogy conflicted with the technology they were attempting to incorporate into their classroom, the likelihood of successful implementation was reduced. This echoes the findings of Songer et al. (2003) with regards to teachers who were using technology competency, but this still does not address how to scale up to enable the whole school and all teachers to make use of digital technologies within their learning programs. Zhao et al. (2002) also recorded that when the teacher was able to link the use of technology to the curriculum then success was more likely. If leaders are able to provide specific ideas or resources that more readily relate to the individual teacher’s curriculum, this could provide an entry point to engage and motivate the teacher to trial and explore the use of digital technologies in the classroom.

Innovation was the second domain that Zhao et al. (2002) placed as one of the 11 factors affecting successful implementation of classroom technology innovations. The study noted that some innovations were easier than others to implement and so, therefore, had a higher possibility of being successful. The two factors listed within this domain identified were the distance from existing school culture and existing practice, and how much the innovation relied on other people or resources. Suggesting that innovations that were the greatest distance from the teachers’ existing practices and school culture were less likely to succeed, and if the innovation relied upon other people and resources, it lessened the likelihood of success. The study concluded by advising teachers to take more of an evolutionary rather than a revolutionary approach to change. Indicating that a little by little approach would eventually produce more sustainable changes. Fullan (2013) and Boyde (2012) suggest that a blended learning approach could allow such an evolutionary road to be taken, and it has been shown to
be a common way in which digital technologies are being incorporated into the curriculum.

Of the groups of factors identified (Zhao et al., 2002), ‘context’ was identified as the third group of distinct factors to impact on the context of learning. This group included such factors as human infrastructure and technological infrastructure. One interesting factor that surfaced from their studies was that although the school may have invested heavily in computers and technological equipment, the actual access and use of the computers was often the limiting factor that held up progress of implementation of the use of digital technologies within the school and classroom. Boyde (2012) and Zhao et al. (2002) also highlighted this issue.

Although challenges and restrictions related to infrastructure and available resources are reported to have lessened over recent years (2020 Trust, 2017), the transition to the effective use of e-Learning in the classroom is still reported to be slow (2020 Trust, 2017). Based on findings by Desimone, Porter, Garet, Yoon and Birman (2002) and Ertmer et al. (2012), it has been suggested that the inconsistent use of e-Learning may be due to low levels of teacher skills, and understanding and knowledge of ways to use digital technologies effectively in the classroom. Specifically, Kirschner and Selinger (2003) concluded that limitations in teachers' knowledge restricts and contributes to the low levels of ICT use in the classroom. Moreover, Kirschner and Selinger (2003) supported the view that a lack of teacher expertise in the field of Information and Communications Technology (ICT) was a primary cause of lack of uptake. Other studies have considered this relationship between the use of e-Learning in the classroom and teachers’ attitudes towards ICT. Ertmer et al. (2012) reached the conclusion that the greatest barrier to successful implementation of ICT in teaching centred on the teacher; in particular, the teacher’s beliefs about the perceived value of ICT to their individual programs. Such differences between studies suggest that there is a combination of factors affecting the teachers’ use of e-Learning in the classroom.

2.4 Pedagogical approaches and e-Learning
In the Ministry of Education Statement of Intent 2014-2018 (2014), it is recommended that teachers must have an understanding of pedagogical principles of specific learning related to using digital tools in instructional settings. This report further recommended teachers refer to the New Zealand Curriculum to understand how effective pedagogy is linked to the use of digital technologies.

The use of e-Learning in the classroom offers the opportunity to provide more learner-centred education that shifts the focus of instruction from the teacher to the student, and enables students to develop skills, such as synthesis of new information and higher-order thinking skills (Keengwe, Onchwari & Agamba, 2014). Despite this, Scott and Usher (2010) concluded that much of today’s current pedagogy is not suitable to deliver programs that will enable the development of these new competencies, so that learning thrives in the future. Drawing on this conclusion, Wright (2010), in her review of the literature on e-Learning and implications for New Zealand schools, indicated that teachers need to adjust their current pedagogy to complement the use of digital tools, and, failure to do so, will result in limited changes in students' learning outcomes.

Keengwe et al. (2014), Wagner (2012), and Zhao et al. (2002) support pedagogical approaches that offer greater student agency in the classroom. Their studies highlighted the fact that advances by educators have been moderate in embracing a more student-focused and constructivist teaching method in both classroom and learning programs. In addition, one of the key findings from the Organisation for Economic Co-operation and Development (OECD) (2013) is synergies for better learning: an international perspective on an evaluation and assessment report was that teachers’ pedagogy selection is often inappropriate when using digital technologies for learning, especially in the modern and flexible learning environments (Osborne, 2013).

In examining the literature on e-Learning, Wright (2010) formed the conclusion that effective e-Learning opportunities do not happen. Instead effective e-Learning opportunities come about by a teacher taking deliberate pedagogical actions. Pedagogy is defined by O’Riley et al. (2014) as the science and art of education, specifically instructional theory, which puts the emphasis on what teachers do, rather than what learners do. Buntting and Bolstad (2013) suggest that, at present, educators are much more likely to only use ICT for retrieval and sharing of information rather than for classroom practices that provide authentic and deep learning experiences. Knowing
how to retrieve information, and facts can be useful, but it usually only develops students’ surface learning skills; however, teachers also need to be developing students’ deeper learning skills in order to successfully prepare them for their future (Hattie, 2003).

A review of the literature on deep learning suggests that pedagogies that support deeper learning experiences include personalised learning strategies, collaborative learning and informal learning; all these have been shown to support deeper learning (Gijsbers & Van Schoonhoven, 2012; Kugemann, Aceto, Dondi & Kastis, 2009; Redecker & Punie, 2013). As such, it appears that the traditional role of the teacher in the classroom, and the choice and variety of pedagogy is changing from one of power and knowledge of all information, to one of guide, facilitator and coach, further supporting the need for pedagogies that support this changing role (Scott & Usher, 2010).

2.5 Teacher professional development and learning

In a best evidence synthesis review of research conducted by Alton-Lee (2003), she suggests that effective teaching is the most significant factor affecting student achievement within a school. Similarly, research by Timperley et al. (2008) also found that quality teaching had a significant influence on students’ outcomes. Timperley et al. (2008) research made the connections between providing effective teacher professional development to optimise student achievement outcomes. As part of their study, Timperley et al. (2008) highlight some of the actions included in professional development programs that have been shown to not be effective, such as listening to inspiring speakers or attending one-off workshops. These, they suggest, rarely change teacher practice to the extent of having an effect on student outcome. These, they suggested that professional development programs that take into consideration both the requirements of the teacher’s skills and knowledge of ICT, and also their skills and knowledge of relevant pedagogies are most effective at making long-term sustainable changes (Timperley et al., 2008; O’Riley et al., 2014). For example, Ertmer et al. (2012) found that the more professional development is aimed at developing a teacher's knowledge, skills and confidence in using technology in the classroom, the greater the
likelihood of change in a teacher’s classroom pedagogy. In view of the fact that effective teaching has been identified as the most powerful in-school influence on student achievement (Hattie, 2003), the importance of providing effective teacher learning and development initiatives and programs is paramount to attaining improved student achievement outcomes (Fullan & Stiegelbauer, 1991; Elmore, 1996).

However, despite the fact that teacher professional development is often relied upon as a strategy to improve teaching practices, it frequently has disappointing results (Opfer & Pedder, 2011). In research by the 2020 Communications Trust (Johnson, Wood & Sutton, 2014), only “14% of schools feel that all of their teachers have the necessary skills to effectively manage student use of personal digital devices for learning” (p.7).

There is evidence (for example, Van Veem, Zwart, & Meirink, 2012; Timperley., 2008; Kirschner et al., 2003) indicating that professional development that takes the form of passive learning approaches, such as lectures, is not very effective at bringing about changes in teacher practice. In addition, Timperley et al. (2008) acknowledge that little is gained in learner outcomes by bringing in an external expert who presents a prescribed one-size fits all practice to a group of teachers. Timperley et al.’s (2008) best evidence synthesis identified specific emerging qualities of effective professional development that led to improved outcomes with student learning. Of those qualities, there was a focus supporting the view that there should be a more active, collaborative and inquiring professional learning environment. In 2012, Van Veen et al. (2012) explored what was currently known about the effectiveness of teachers’ professional development programmes. Van Veen et al. (2012) defined and divided the range of professional development activities in which teachers commonly participated in two main forms. They labelled the forms, traditional and innovative. From this stance, traditional professional development was characterised by a passive role of attending teachers and often involved lectures and conferences. In addition, the contents of the professional development was not adjusted to the teachers who were attending. The innovative form of professional development included activities that required teachers to take an active and collaborative role. Also, this type of professional development programme considered the individual relevance to teachers’ practice when building the contents of the programme. Van Veen et al. (2012) concluded that the amount of
empirical evidence supporting innovative professional development programmes was limited at this time. However, Van Veem et al. (2012) also emphasised that there was an assumption during educational debate that innovation was more effective in making changes in teachers’ classroom practices.

2.5.1 Active learning

According to Darling-Hammond and McLaughlin (2011), teacher education that results in changes in pedagogy requires teachers to be active in the learning process, to learn through the same methods they will be using with their students, and to engage in collaborative inquiry and reflection. In other words, to “understand deeply, teachers must learn about, see, and experience successful learning-centred and learner-centred teaching practices” (Darling-Hammond & McLaughlin, 2011, p.83). Active learning requires the learner to be actively engaged in the learning and requires students to be involved in activities, such as dialoguing, debating, writing, problem-solving, and higher-order thinking, e.g. analysis, synthesis, evaluation and creating (Bonwell & Eison, 1991). In a project that summarised research on active learning Bonwell et al. (1991) concluded that active learning approaches allowed learners to utilise higher-order thinking skills, such as creating, evaluating and analysing, in addition to the lower-order thinking skills, such as remembering and understanding. In more recent studies, Bolstad et al. (2012) also supported this learning strategy by reporting that deep learning occurs when learners are actively engaged in ‘big picture’ learning, rather than just learning pre-packaged, bite-sized pieces of knowledge delivered to them by experts. A comparative study by Reime, Johnsgaard, Kvam, Aarflot, Engeberg, Breivik and Brattebø (2017) pointed out that in many learning environments, there is no distinct line between a passive and active lesson procedure, and often the lesson is a mixture of both passive and active experiences. In support of a more active approach, Guskey (2002) concluded that learners need to experience new approaches first, before making changes to their personal values or beliefs that it will be beneficial for them to use technology in their classroom. Similarly, research completed by Desimone et al. (2002) concluded that teachers who take on both the student and expert role can deepen a teachers’ understanding of pedagogy innovation and gain a clearer understanding of ‘how we learn to learn’.
The literature supports the view that people learn more deeply if they learn by actively taking part in the learning experience, and by trialling and applying their learning in an authentic, relevant, collaborative and reflective environment (Bolstad et al., 2012). It is, therefore, being investigated if in-house e-Learning professional development programs are delivered in an active learning environment it could lead to the increased use of e-Learning within the classroom at this current school, more so than if professional development initiatives continue to be delivered in a passive manner.

Many teaching and learning models have been developed as a direct consequence of theories about learning, such as direct teaching, cognitive teaching, and learning models and social models. Early researchers, such as John Dewey, Jean Piaget and Lev Vygotsky, focused their studies on how students learnt and informed the move to a more hands-on, active learning approach within schools (Coombs, Gary, and Max Elden, 2004). Others, such as Armstrong (2012), have claimed that traditional education ignores or suppresses learner responsibility. By providing more learner-centric methods, the focus of activity shifts away from the instructor and encourages the learner; in this case, the teacher attending the professional development initiative, needs to become actively involved and to take responsibility for their own learning. Student-centric learning activities, such as hands-on activities, authentic problem solving and experimental experiences, debating, and cooperative learning, such as team or inquiry-based projects, have been shown to be superior to the traditional teacher-centred approaches (Felder & Brent, 2016). Learner-centred activities, such as inquiry-based approaches, allow learners to develop higher-order cognitive skills (Hanna et al., 2010). Barron and Darling-Hammond (2008) further support the view that a more student-centric and active learning environment is more effective for deeper learning and higher-order skill development to take place, and this is achieved by shifting the focus of instruction from the teacher to the learner.

### 2.5.2 Collaboration

Some authors (for example, Desimone et al., 2002; Birman et al., 2000; Cohen et al., 2013; Garet et al., 1999) have reported that professional development is, in fact, more
effective in changing teacher classroom practices when it includes the collective participation of teachers from the same school. Similarly, Tearle (2003) links the importance of providing a supportive environment to gaining effective outcomes for teacher professional development courses. A collaborative professional development learning environment allows teachers to learn from each other in a supportive and reflective environment, and to share ideas (Wenger et al., 2002). In this way, teachers become aware of practices and pedagogy, and can support changes in what they do. In addition, Wenger et al. (2002) suggest that a collaborative professional learning environment gives participants time and support to develop and reflect on their professional skills and capabilities. Further, supporting the use of a more collaborative professional learning environment, Darling-Hammond and McLaughlin (2011) point out that it can be an important component of teacher learning because it allows teachers to share good practice, inquire, and reflect on their own practice. In support, McCombs and Whisler (1997) formed the conclusion that learning is enhanced in contexts where learners have supportive relationships, have a sense of ownership and control over the learning process, and can learn with and from each other in safe and trusting learning environments.

2.5.3 Relevance to practice

Van Voom et al. (2012) identify that when the contents of the professional development programme related to classroom practice, more specifically to subject content, pedagogical content knowledge and the student learning process of a specific subject; when this happens, an increase in teacher quality and student learning results. Korthagen and Kessels (1999) suggest that content in teacher professional development is often more theoretical and abstract than the practical knowledge educators need in the classroom, and this creates a gap between theory and practice. Their research reveals that a more authentic approach, one that immerses the teachers in practice and allows for an individual educator's creation of knowledge would be more likely to lead to a positive change in a teacher's classroom practice. In a similar theme, another study by Zhao et al. (2002) found a relationship between successful professional development that makes use of technology and innovations that the teachers will be using in their classrooms, providing professional learning that
is an authentic and meaningful learning experience for each person in attendance. Furthermore, Zhao et al. (2002) identified that the relevance of professional development programs to a teacher’s practice increased the teacher’s interest and created a sense of ownership and change in the teacher’s practice. In addition, Zhao et al. (2002) recorded that when the innovator was able to link the use of technology to the curriculum, then successful changes to teacher practice were more likely to occur. The need to differentiate professional development programs and the benefits of catering to individual teacher’s needs was analysed by Clarke and Dede (2009), who concluded that for any innovation to be sustainable, it needs to be supported by a broad community of participation. Ertmer et al. (2012) concluded that the greatest barrier to the successful implementation of any new initiative is centred on the teacher; in particular, their beliefs and perceived value to their individual programs.

2.5.4 Time and Reflection

Lack of available time in an already busy working schedule is often cited as a reason for not integrating new teaching and learning strategies into the classroom or participating fully in ongoing professional learning programs (Ham, Gilmore, Kachelhoffer, Morrow, Moeau, & Wenmoth, 2002). Cumming et al. (2014) make the recommendation that teachers are given time before introducing digital devices to students so that they can actively explore apps and professional development. Wenger et al. (2002) also draw attention to the benefits of giving participants’ time and support to develop and reflect on their professional skills and capabilities. This is further supported by Timperley et al. (2008) who conclude that a key finding of their synthesis is that teachers need to have time and opportunity to engage with key ideas, and time to use those ideas to make changes and improve their own practice.

Often professional development comprises just one after-school session. Research (Timperley et al., 2008; Guskey, 2002; Davis, Preston & Sahin, 2009) indicates that this style of delivery is not effective in bringing about sustainable changes to teachers’ practice, beliefs and attitudes. Similarly, Fullan, (2013), and Boyde (2012) supported a step by step progress approach and justified how a blended approach could be used
as an effective option in which technologies can be incorporated into the curriculum in a more evolutionary and reflective approach.

Alodail (2016) concluded that teachers needed time to adjust. This is something that Timperley et al. (2008) also highlighted when asserting that one-off workshops were rarely effective to make sustainable changes in a teachers’ classroom practice. It appears evident that teachers also benefit from ongoing support to bring what they experience during a professional development session into the realms of their own context and classroom, highlighting the importance of how the teaching as an inquiry cycle can be put to effective use (Timperley et al., 2008). The purpose of the Teaching as Inquiry cycle is to improve student outcomes. The cycle of inquiry is a framework that teachers can use to help them learn from their teaching practice and develop their knowledge. The teacher provided evidence inquiring into their own practices and students’ learning. Evidence from this inquiry enables the teacher to develop strategies that are likely to help the students to learn (Ministry of Education, 2007).

Research further supports the view that providing active learning opportunities combined with reflection increases the positive outcomes of teacher learning and changes in their classroom practices (Guskey, 2002; Smith et al., 2005). Experiential and reflective environments were deemed beneficial in research carried out by Baumfield et al. (2008), Coolahan (2002), Fraser, Kennedy, Reid and Mckinney (2007) and Twining et al. (2013). Timperley et al. (2008) state that a range of interactive elements should form the basis of a cycle of inquiry. The New Zealand Curriculum (Ministry of Education, 2007) supports the use of a cycle of inquiry to improve and promote purposeful teaching which will improve student outcomes.

2.6 Summary

In summary, this review has considered literature in the area of ICT in teaching, as well as literature that outlines important factors for teacher professional learning. The review of literature suggests that there are multiple barriers and issues still preventing the smooth implementation of e-Learning into schools and classrooms. One of those barriers is providing teachers with professional development and learning opportunities
that result in and support teachers to take their professional development learning back into the classroom.

Finally, the literature provided a brief survey of the literature on important aspects of a professional development programme, which, if used, could increase the likelihood of teachers making changes in their classroom practices. Some of these aspects include active learning, collaboration, relevance, reflection and time.
CHAPTER THREE: METHODOLOGY

3.1 Introduction

This small qualitative study is focussed on the area of e-Learning in a small semi-rural school and involves two e-Learning professional learning workshops followed up with a questionnaire and interview.

The study draws on a practitioner research framework where the study is conducted within my own school. It is the intent that the study will be of benefit to both my own practice and the school community (Middlewood, Coleman & Lumby, 1999).

The aim of this study is to investigate teacher experiences and perceptions regarding implementing e-Learning from a professional development programme into their classroom practice.

There are three research questions that guided this study. The questions are:

1. What are the current practices and perceptions of e-Learning for teachers at my school?

2. From a teacher perspective, can in-house professional development workshops in e-Learning lead to changes in the use of e-Learning in the classroom?

3. From teachers’ perspectives, what specific aspects best benefit them when undertaking professional learning to enhance the use of e-Learning in the classroom?

The techniques selected to collect data for this study were questionnaires and semi-structured interviews. The data was collected from five teachers who taught across different curriculum areas at a secondary school in New Zealand.
This research study grew from the researcher's previous study and mini-inquiry on “What factors affect the successful implementation of digital technology into the classroom?” The literature reviewed identified during the previous study highlighted that ineffective professional development programs were one of the barriers preventing the increase of teachers’ use of e-Learning in the classroom. This current research looks and considers what e-Learning professional development and learning programs might be effective by trialling and seeking feedback on a collaborative workshop programme that uses an approach supported by the literature.

3.2 Theoretical perspectives

A constructivist/interpretive paradigm was adopted to guide this research study (Cohen, Manion & Morrison, 2013). Kuhn (1962) describes a paradigm as being the common beliefs and agreements shared between scientists about how problems should be understood and addressed. Often, studies of this nature do not begin with a theory, they have no fixed answer and are only directed within one specific context. Instead they often “generate or inductively develop a theory or pattern of meanings” (Creswell, 2003, p.9) as the research develops and progresses.

The interpretivist/constructivist approach intends to understand ‘the world of human experiences’ suggesting that ‘reality is socially constructed’ (Cohen, Manion & Morrison, 2013, p.36). This approach allowed the researcher the opportunity to look at different realities and perspectives, and to describe the views of participants. Furthermore, constructivist and interpretive approaches usually involve the researcher being situated within the system or the setting being studied, and tend to rely upon researcher and participant collaborative practices (Creswell, 2003). As is the case with this research study, constructivist research practices aim to interpret data and create an agenda for change or reform. In this case, it is anticipated that the data analyses could provide insight and informed information that could assist teachers to increase their use of e-Learning in their classroom in the school (Creswell, 2003).

According to Flick (2015), although there may be common patterns and findings between the participants, each will have their own individual belief of what is reality or
truth in their particular situation. Furthermore, these views and opinions are changeable due to new learnings and experiences. This is also true of the researcher. As such, no single reality or truth exists, and what may be true for one participant may not be rendered true for another (Flick, 2015). An emic approach to knowing what is the reality enables the researcher to gain an insider's view of a situation and interaction between the researcher and participants is seen as necessary for the success of this research inquiry (Herr & Anderson, 2014). This allows knowledge to be constructed by a community in a collective manner and the accumulation of information that could be of benefit to all participants (Bishop et al., 2009). A major goal of practitioner research, in terms of this study, is to generate local knowledge, which can then be fed back into the environmental setting (Herr & Anderson, 2014). Cochran-Smith and Lytle (2009) describe practitioner research as a type of research in which the practitioner and the researcher roles, and the overall purpose of such research is focussed primarily on improvements in students learning. Campbell and Groundwater-Smith (2010) and Somekh et al. (2006) assert similar beliefs in support of practitioner research suggesting that practitioner research enables teachers to investigate their own educational practices in order to improve and transform such practices.

The common character of practitioner research is that it is done by practitioners themselves, usually in the workplace. Herr and Anderson (2014) disclose the advantage of practitioner research and the study taking place in a researcher’s school is it allowed for the researcher to come and go freely and have the benefit of already formed positive relationships with the participants. In addition, Herr and Anderson (2014) highlight the disadvantages of such methods, which is the issue of increased likelihood of bias of the study as the participant may not be as open in sharing their perceptions and experiences in case they were viewed negatively by other stakeholders in the community.

3.3 Methods of data collection

The instruments and techniques used to collect data to address the research aims and questions were semi-structured interviews and questionnaires. The initial questionnaire was administered before the professional development workshops. The
second questionnaire was administered after the professional development workshops, and the semi-structured interviews were conducted after the professional development workshops.

Sample qualitative studies usually encompass a smaller purposively sourced sampling group and work within a small group setting to encourage and build trust so that participants share their opinions honestly (Flick, 2015). In this study, five participants took part in the research. This small number provided for a close collaborative group. This small number selected was a result of wanting to create a small, collaborative group that would feel safe to voice their opinions and reflections, and provide more time for the participants to do so. It was also easier to manage, for example, to get everyone together at a convenient time and provide personalised and relevant resources to a small group; it could get rather difficult if it was a whole school workshop. Flick (2015) highlights the disadvantage of such a small group by the fact that the data collected can be quite narrow and care needs to be taken not to make the assumption that it is a representative of all the teachers in the school.

However, qualitative research is not reliant on measurement, but instead on data analysis of an interpretive value (Flick, 2015). In addition, the use of qualitative methods in the use of interviews and questionnaires were selected because it allowed the study to gather valuable and deep insights into each participant’s individual experiences and perspectives, and capture viewpoints that would enable key themes and common ground to be identified (Yin, 2003; Denzin & Lincoln, 2011).

### 3.3.1 Questionnaires

Although questionnaires can be difficult to construct, they can offer an insight into participants’ perspectives and trends within the group (McNiff & Whitehead, 2012). In addition, questionnaires were used for this study because they are often found to be less intrusive, in comparison to observations (Robinson & Lai, 2005). The aim was to investigate teacher experiences and perceptions regarding implementing e-Learning from professional development programmes into their classroom practice.
A mix of question types were used which were relevant to seeking information to answer the following aims and questions posed in this study (Check & Schutt, 2011). The questionnaires are included in this thesis as Appendix B. The initial questionnaire sought to gain an understanding of Question One of this study, what are teachers’ current practices and perceptions of e-Learning? Furthermore, the questionnaire enquired into their current capabilities, practices and plans for the use of e-Learning in their learning programs and learning environment.

The information gathered from the questionnaire was used primarily to guide the planning and development of the professional development workshops and to make sure the professional development program was relevant to participants. During the literature review, relevance to teachers’ needs, had been shown to have a significant effect on how much a teacher engages with a professional development initiative (Clarke and Dede, 2009; Zhao et al., 2002; Korthagen and Kessels, 1999; Ertmer et al., 2012). In addition, the initial questionnaire sought to identify what technology teachers had access to in their own teaching.

The second questionnaire took place after the professional development workshops, allowing a comparison to be made between the initial questionnaire responses. In the analysis of the questionnaire, there was a focus of attention on changes in participants’ perceived e-Learning capability and confidence in using e-Learning in their classroom. The questionnaire also recorded whether they had implemented e-learning tasks in their own classroom environment. Overall, this second questionnaire linked to Question Two of the study: from a teacher perspective, can in-house professional development workshops in e-Learning lead to pedagogical changes and use of e-Learning in the classroom?

The second questionnaire provided an opportunity for participants to identify whether and what changes they had undertaken in their own practice and whether they believed their confidence and e-Learning capabilities had grown as a result of the professional development workshops. The questionnaires were conducted before the interviews so that points of interest and responses could be highlighted and discussed in further detail during the individual semi-structured interviews.
3.3.2 Semi-structured interviews

Semi-structured interviews were also used as a source of data collection. Qualitative interviews rely on participants’ capabilities to verbalise, interact, conceptualise and remember (Mason, 2002). Semi-structured interviews were chosen because they allow participants the opportunity to describe their world; they are easy to access and they provide appropriate data quickly (Silverman, 2013). Finally, the selection of interviews as a method of data collection can reveal detailed insights and often enable the researcher to develop a more open perspective as to how people live and work (Flick, 2015).

Semi-structured interviews contain elements of both structured and unstructured interview techniques. Open-ended questions have the advantage of being able to ask the same questions to each of the participants and therefore keep to the point of the study, but it also provides an opportunity to delve deeper into their personal responses and further clarify or expand points of interest (Creswell, 2011). This provided an environment for rich and deep descriptions as the participants recalled and described their experiences in their own words (Briggs, Morrison, & Coleman, 2012). There was also an opportunity for flexible discussions within the interview, which provided an opportunity for salient points to be explored more fully. Furthermore, the use of semi-structured interviews allows for a sequence of themes to be covered and related questions to be asked. It also allows for a change of sequence and allows the interviewer to respond spontaneously to the interviewee (Kvale, 1996). This method allows the researcher some flexibility for movement and change of direction of thought and questioning personalised by the participants’ interpretations, reflections and personal narrative when compared to using a structured or unstructured interview technique.

Another advantage of using semi-structured interviews is having direct control of the direction the questions took and being able to control the flow of the data collection process. Many interview studies are used to gain an understanding of the perceptions of participants (Silverman, 2013), which is part of the aim of this study. Semi-structured interviews enabled the researcher to seek answers to key questions regarding e-Learning and professional learning. The researcher wanted to be able to ask the
same questions to each of the participants, and this would not have been possible if an unstructured interview technique had been used.

The interview questions (Appendix C) sought to investigate teacher experiences and perceptions regarding implementing e-Learning from professional development programmes into their classroom practice. In addition, the interview questions also sought to establish what methods of professional learning participants viewed to be effective in equipping them with the skills and confidence to use e-Learning in their classroom setting. During the interview, participants are asked to rank in order of perceived importance, aspects identified in the literature as important to professional learning. These include relevancy, active learning, collaboration, reflection and time/timing. In addition, each participant was asked to talk a little bit about why they had chosen their selected ranking system. The semi-structured interviews also asked participants to describe any changes in their pedagogy and whether they observed any changes in students’ attitudes and behaviour when they trialled an e-Learning resource in their classroom. The semi-structured interviews aimed to gather data to inform Questions Two and Three of this study:

1. What are the current practices and perceptions of e-Learning for teachers at my school?

2. From a teacher perspective, can in-house professional development workshops in e-Learning lead to changes in the use of e-Learning in the classroom?

Participants were invited to choose the time and location of the interview. Bell (2010) encourages researchers to allow interviewees to choose a time convenient to them, and a location they are comfortable with to discuss and share. All interviews were audio recorded. Cohen et al. (2013) supports the practice of audio recording interviews, in preference to written notes because it lowers the risk of the researcher making assumptions or missing out key points or focusing on alternative answers deemed more relevant to the researcher. Recording the interview also has the advantage that it can be replayed to check the researcher’s original thoughts and reflections on what was being said.
During the interview, the researcher refrained from displaying any bias towards the participants’ opinions. Verbal and facial expressions were kept neutral to prevent the interviewee being swayed by the researchers’ behaviour and conduct. The researcher chose not to video the interviews as it was thought this may seem rather intrusive; positive relationships with the participants had already been made, and the researcher was eager to continue in the role of a trusted colleague with them (Silverman, 2013).

Aware of the time constraints for busy teachers, the researcher tried to make the interview questions and time requirements as concise as possible. Interviews lasted for a maximum of 30 minutes each.

The use of interviews can also hold disadvantages. There can be a danger that key points may be missed or the researcher biasing some points over another that could have been critical information (Flick, 2015). Audio recordings went some way to avoid this issue of missing information or biasing some points over another, allowing the researcher the opportunity to revisit and listen to the interviews multiple times. Another drawback of using interviews as a research instrument is that it can be time-consuming, especially with the need to transcribe and arrange individual interviews with each participant (Bell, 2010).

For this study, the interviews were professionally transcribed and then rechecked by the researcher. At this stage, the participants were given the opportunity to read and check for accuracy (Creswell, 2003).

3.4 Data analysis

Merriam (1998) describes the process of data analysis as the transformative process in which raw data is turned into findings or results. The selection of a qualitative approach allows the researcher to seek out general themes and make interpretations of the meaning of the data to form a final written report related to the original questions (Creswell, 2011). The final report provides a summary of findings which can be used to prompt discussion and action for the school to use to improve the effectiveness of e-Learning in the learning environment. Although individual perspectives will be
subjective and unique to the individual (Cohen et al., 2013), it is suggested that when all the data is collected and analysed, it could form a part of a whole and provide a specific view of the situation.

3.4.1 Questionnaires Data analysis

Questionnaires require coding to categorise trends and patterns as they emerge from the responses (Lofland, Snow, Anderson & Lofland, 2006). The use of coding enables the researcher to identify themes, similarities and differences between the data collected (Cohen et al., 2013; Lofland et al., 2006). Strategies or answers that are similar between participants may indicate common successes or not, or areas of differences that prompt further investigation or study.

The first cycle of data analysis took place using the initial questionnaires. The individual questions allowed the setup of an Excel recording sheet (Green, Willis, Hughes, Small, Welch, Gibbs, & Daly, 2007). The grid format allowed all information to be viewed together. This allowed for a clearer view when trying to identify and pick out commonly used words, themes or similar responses between participants. The study analysis also looked for evidence that indicated differences between participants’ responses. Some of the responses were used to inform the planning and development of the professional development workshops; for example, question eight directly asks ‘What would you like to gain from this professional development workshop?’ This question allowed me to make sure the workshop was relevant to each participant’s requirements, but also it enabled me to inquire if the participants’ needs were similar and if they were looking for similar support during e-Learning professional development initiatives.

The questionnaire enabled the observation of issues, such as infrastructure and equipment limitations, and teacher e-Learning capability and confidence. From the analysis of this initial questionnaire, a summary of initial findings was created.

The second questionnaire took place after the two professional development workshops. Again, the questions and responses were set out in an Excel document so
it was clear to see all responses from each participant for each individual question to be able to compare them with each other participant’s responses. Common themes were looked for between participants’ responses and significant differences or surprising answers (Yin, 2003; Denzin & Lincoln, 2011).

Once the initial questionnaire and the second questionnaire had been analysed individually, questions four, six and seven from both questionnaires were separated out for analysis. These three questions had been asked in both questionnaires and so a comparison between the two could be undertaken to identify changes in the participant responses before and after the professional development workshops. These three questions focused on participants’ current use of e-Learning in their classroom, their perceived confidence in using e-Learning, and, finally, their perceived e-Learning capabilities. The results allowed the researcher to determine if there was any significant difference and similarities from before and after participation in the professional development workshops. Using the data from the remaining questions, a post-questionnaire summary of findings was written.

3.4.2 Interview data analysis

A thematic analysis approach was used to analyse the collected data in this study. Byrne (2017) discusses how most of the majority of qualitative studies select a thematic approach as it allows for data to be examined and themes to be identified within the collected data. The researcher usually moves through set stages that start with an initial scanning of the collected material and eventually result in the development of a set of thematic categories. These categories undergo further examination which usually results in a coding system that enables the researcher to present and relate the material to the original literature review (Byrne, 2017).

The interview questions were designed in a semi-structured format allowing for some flexibility of discussion and interaction between interviewee and interviewer. Initial data analysis took the form of reading each of the transcripts and immersion in the collected interview data. From here identification of interesting features, words and sections of the data were highlighted using different coloured pens and coded. Criteria for
selection and coding was that the words related to the research aim and research questions, and could provide insight into the study as a whole.

Repeated reading of the transcripts, and listening to the recorded interviews resulted in a series of codes. Some sections of the data contained multiple codes and were highlighted in different colours for the same response because it covered different areas of interest in the same section.

The list of codes was individually cut out and placed on the floor. Time was taken to think about if and how the codes could be related and combined under one named theme or group.

Similar codes were placed together to create broader thematic groupings, for example, data relating to trust, collaboration, sharing, cooperation and collegiality were placed together and resulted in the overarching key themes being named ‘collaboration’ to link all the related data together. With time, this led to eight thematic groups being selected due to their being the most commonly occurring, in addition to linking in with the aims and questions of the study. The identified themes were success, time, active learning, collaboration, equipment, relevance, reflection and other points of interest.

At this stage, the interview transcripts, interview recordings and observational notes were reread to check for any missed significant themes and that the coding originally given was still relevant to the study questions and aims. Once completed, each participant’s responses that were thought to be significant were allocated a blank document that had been divided into the eight themes above as headings. Previously individually highlighted and coded sections from the original transcript were then copied and pasted into the thematic grouping it most strongly related to in the new document. This stage was repeated for each participant until five individual documents existed. This allowed a clearer picture to be analysed from each individual participant’s interview comments.

Once this was complete, each of the five participant documents were then assigned to an individual with an easily identified font colour, and each document was printed out. Time was then spent looking for links and relationships between participant codes and
thematic group responses to try to categorise the data into major and significant data to link the aim of the study, answer the questions of the study and link the literature review with the major findings of the data collected.

Eventually, the findings were put into three major categories: Technological Aspect, Teacher Aspect and Professional Development Aspect. Most of the data collected appeared to be able to fit into one of the above aspects. Although, it should be noted that not all the data fitted distinctly into one of the three above and there was some cross-over between some responses that linked to more than one of the categories. For example, ‘Time’ was highlighted and entered in each of the categories selected, each for a different reason. This categorisation did, however, enable the researcher to make sense of the experience of the participants in the study and relate the experiences to the main concept of the study that was undertaken.

During the interview stage of data gathering, participants were also asked to rank the five specific professional development aspects that had been identified in the literature review as being effective in increasing teachers’ classroom use of e-Learning. The professional development workshops had deliberately intended to incorporate and take into account these aspects. This information provided a clearer picture of what participants found to be valuable with respect to the delivery of teacher professional learning and development initiatives.

Creswell (2011) highlights the fact that coding and identifying themes can be time-consuming. There are software programs that can help cut down the time requirements of this procedure. However, because this research consisted of a small sample number and interviews took less than 30 minutes, the researcher chose to code each manually.

Finally, the questionnaire data and interview data were merged and studied together to compile an overarching view of the data in response to the aim and question of the study as a whole. Similarities, differences and abnormalities within individual participants and the group as a whole were collected.
3.5 Validity and Reliability

Qualitative research is concerned more with validity than with reliability (Cardno, 2003). This is because most practitioner-based projects are small and in-situ. In these cases, it is unlikely the findings could be confidently used to predict the results in another educational setting. In addition, qualitative research is more focused on providing a description of observations and action in a specific situation. That is not to say that the findings generated will not be of interest to other schools and practitioners (Cardno, 2003).

Therefore, in terms of this research, while the results of the study have immense value to the in-situ environment, the same results may not occur in another similar environment. It is hoped, however, that the findings from this research will add to the pool of knowledge and understanding around teacher professional learning and use of e-Learning in the classroom.

Validity requires the researcher to reflect on whether the instruments and questions selected really measure the idea that is being researched (Cardno, 2003). This refers to the way the data is gathered, analysed and presented, and the need to ensure that the research project is well founded and has clear aims. Mutch (2005) reflects upon this point by arguing that the nature of qualitative study means that it is not possible to replicate a study in another environment or situation and achieve similar results. Moreover, she goes on to explain that the point of qualitative research is to allow participants to represent personal views and experience (Mutch, 2005).

Regarding the validity of this study, time was spent reflecting on the aim of the study and what questions would need to be asked to provide data that would enable the aim of the study to be achievable. The proposal for the study was subjected to review and feedback from the postgraduate research proposals committee, and ongoing feedback was sought from my study supervisor.

Consultation with the leadership at my school was undertaken to agree to frequency and timing of the professional development workshops. Given the demands on teachers, time alterations were made to the times and frequency of workshops to
accommodate other professional learning happening in the school. Agreement was made with the Principal and senior leadership team that the participants would not be required to attend other whole school professional development programmes during this time.

Initially, the study idea centred on a ‘toolbox’ of e-Learning resources to be provided to participants and the idea that the researcher would support each participant as they trialled different resources in the classroom. However, after reviewing the literature, it appeared that providing a toolbox of resources seemed detrimental to developing a more collegial and active learning approach.

### 3.7 Ethical issues

During the application for ethics consent, many issues were highlighted as problematic for protecting the participants from harm. McNiff et al. (2012) state that if the learning of others is part of your research, then you must get ethical clearance before you begin. In addition, Unitec guidelines require any research with human participants to have ethical consent.

An ethics application was submitted, and once ethics approval had been granted, a Participant Information Sheet and expression of interest was emailed out about being part of the study. Each participant who registered an interest was approached individually, and the project involvement and requirements were discussed in detail. Participants were also given time to reflect on participation before returning a signed consent form, to make sure participation was on a voluntary basis. Within the form, there was a promise of confidentiality and a discussion of the use of pseudonyms, which would protect the identity of the participants.

Attention was paid to confidentiality as much as was possible given the environment and this was done by not discussing individual participant responses with other stakeholders at the school. This reduced the likelihood of misunderstandings between the researcher and participants (Bell, 2010).
The consent form also had a ‘get out’ clause that allowed participants to withdraw. Individual time was also offered to participants to discuss any concerns or further information that they required. Organisational consent was also applied for and accepted. Also, there was an awareness of other professional development initiatives already taking place, and the researcher was keen not to be seen as a threat to the current initiatives or institutional culture and hierarchy (Herr & Anderson, 2014).

This research study could be perceived as challenging current practices at the school, both at a classroom and management level. Obviously, not everyone would agree that the current teaching practices at the school needed changing and the researcher needed to continue to be open to all views and opinions, and try not to make preconceived and unjustified assumptions. This awareness acted as a timely reminder of the need to be mindful and to balance the researcher’s need to challenge the current state of affairs and existing conditions, and the need to protect the positive working relationships that were already formed with other colleagues at the school. Throughout the time spent in the school, the researcher continued to develop already formed respectful relationships, good practice and integrity, and at no time did the researcher expect others to do something that they would not complete themselves (McNiff et al., 2012). Respect was shown to all throughout the project, and participants were kept informed at all times (Wilkinson, 2000; Cohen et al., 2013).
CHAPTER FOUR: THE STUDY

The study consisted of two professional learning and development workshop programmes, which were designed and implemented using the aspects that had been identified during the literature review. The aspects selected for the professional development workshop programmes were active learning, relevance to individual teachers’ requirements, collaboration, reflection and time.

4.1 Planning and preparation for the workshops

The five participants who self-selected to be part of this project were invited, in person and via email, to attend two professional learning and development workshops as part of the study.

The professional learning and development workshops were designed by the researcher and focused on introducing, experimenting and experiencing a selection of e-Learning tools and resources relevant to the responses participants had given in the initial questionnaire.

The design, format and delivery of the professional development workshops were built upon using the aspects identified in the literature review as being effective at leading to changes in teachers’ e-Learning classroom practices. These five aspects identified from the literature review were active learning (Bonwell & Eison, 1991; Eison, 2010; Bolstad et al. 2012; Reime et al., 2017; Guskey, 2002; Desimone et al., 2002), collaboration (Desimone et al., 2002; Birman et al., 2000; Cohen et al., 2013; Garet et al., 1999; Tearle, 2003; Wenger et al., 2002; Darling-Hammond and McLaughlin, 2011) relevance to teachers classroom practice (Korthagen and Kessel, 1999; Zhao et al., 2002; Timperley et al., 2008; Clarke and Dede, 2009), time (Fullan, 2013; Boyde, 2012; Ham et al., 2002; Cumming et al., 2014; Zhao et al., 2002; Alodail, 2016) and reflection (Ministry of Education, 2007; Guskey, 2002; Smith et al., 2005; Clark and Hollingworth, 2002; Timperley et al., 2008; Baumfield et al., 2008; Coolahan 2002; Fraser et al., 2007; Twining et al., 2013).
In addition, the types of e-Learning resources and tools used in the workshop were selected and designed using the information provided in participants’ initial questionnaire where they were asked, where do you see that technology could be used most effectively in your subject area and what would you like to gain from this professional development project?

Each workshop lasted for approximately 1.5 hours, and both followed a similar format. The first half hour included introduction, an opportunity to reflect and discuss practice related to e-Learning and the remaining hour allowed for participants to have the time to work together and actively trial resources selected by the researcher, as well as share their own resources and learn from each other in a hands-on collaborative and reflective learning environment.

The initial questionnaire revealed that participants had concerns regarding the amount of time that was involved in the study. This issue of time was not only a concern in reference to attending the workshop but also the time required to adapt the resources to be relevant to the participants’ classroom settings and the time needed in lesson time to implement the e-Learning resources. In response to the concern of time availability, the researcher was able to minimise and reduce participants’ time expenditure in each of these three areas and in the following ways.

Resources for the workshop that promoted e-Learning were chosen for their relevance to each participant’s requirements, as requested in their questionnaire. Evidence from studies by Zhao et al. (2002) and Timperley et al. (2008) during the literature review had indicated that relevancy to teachers’ practice was an important character of effective professional development. The questionnaire gathered information on where the participants envisage technology could be used most effectively in their subject area and what the participant would like to gain from this professional development project. The selected e-Learning resources were also selected for their ability to be time-efficient, flexible, and straightforward to learned and be quickly implement in a variety of different classroom contexts.
4.2 The workshops

It was the intention that the workshops would involve active learning. This was supported by the literature on teacher professional learning. The workshops aimed to provide a supportive and collaborative environment to encourage teachers to engage, support and work together in trialling the different e-Learning resources on reflect and discuss how they might be used in a classroom.

The first workshop was introduced with an outline of the workshop and the aims with a visual example and explanation of a selection of e-Learning resources. Once this had been completed, all participants were given time to play with and trial the e-Learning resources.

The second workshop opened with a discussion and time to reflect on what participants noticed in regards to the e-Learning resources they had trialled in their classrooms and what they had noticed, and any issues they had come up against. The relevance of using the Teaching as Inquiry process was outlined and explained. Drawing on the Ministry of Education’s (2007) statement that any teaching strategy works differently in different contexts for different students, effective pedagogy requires that teachers inquire into the impact of their teaching on their students (Ministry of Education, 2007).

It is acknowledged that professional learning initiatives in schools are most effective when they link with existing initiatives or projects (Timperley et al., 2008). Thus, although it is a Ministry of Education (2007) requirement for each teacher to complete at least one Teaching as Inquiry cycle each year, there seems to be confusion to many of the teachers at our school as to what is required and how to go about undertaking this requirement. This became apparent during the first workshop, and the researcher responded to this information by encouraging participants to incorporate aspects of existing practice and student learning problems they were currently experiencing in the professional learning workshops. This time allowed participants to reflect on their practice and discuss how important reflections were to their practices, in particular, reflection within a collaborative group.
4.3 Final Questionnaire

The final questionnaire took place after the two professional development workshops. Common themes were looked for between participants’ responses and significant differences or surprising answers (Yin, 2003; Denzin & Lincoln, 2011). Once the final questionnaire had been analysed individually, questions four, six and seven from both questionnaires were separated out for analysis. These three questions had been asked in both questionnaires, and so a comparison between the two could be undertaken to identify changes in the participant responses before and after the professional development workshops. These three questions focussed on participants’ current use of e-Learning in their classroom, their perceived confidence in using e-Learning and finally, their perceived e-Learning capabilities. The results allowed the researcher to determine if there were any significant differences and similarities from before and after participation in the professional development workshops. Using the data from the remaining questions, a post-questionnaire summary of findings was written.
CHAPTER FIVE: FINDINGS

5.1 Introduction

The study aimed to investigate teacher experiences and perceptions regarding implementing e-Learning from in-house professional development programmes into their classroom practice.

Three questions were used to guide the study;

1. What are the current practices and perceptions of e-Learning for teachers at my school?

2. From a teacher perspective, can in-house professional development workshops in e-Learning lead to changes in the use of e-Learning in the classroom?

3. From teachers’ perspectives, what specific aspects best benefit them when undertaking professional learning to enhance the use of e-Learning in the classroom?

The study included a series of workshops, and the participants were five teachers undertaking two e-Learning professional learning workshops. The literature review provided some information on specific aspects that had been shown to be effective in the delivery of e-Learning professional development programs. The specific aspects identified were active learning, collaboration, relevance, time and reflection. Effectiveness in this sense was judged on whether the participant took back any e-Learning resources and trialled them in their classroom.

Two questionnaires and individual semi-structured interviews provided key data for this study. The initial questionnaire was presented before the professional development workshop. The purpose of this questionnaire was to gain an understanding of the current practices and perceptions of e-Learning, identify what technology they presently had access to and what e-Learning resources would be relevant to their
requirements. The second questionnaire was completed after the workshop. The purpose of this questionnaire was to identify if they had trialled one of the e-Learning resources in their classrooms and if there had been a perceived change in their e-Learning confidence and capability since the professional development workshops.

The individual semi-structured interviews were completed after the second questionnaire. This allowed further discussion and clarification from the questionnaire responses. The purpose of the interviews was to gain a deeper understanding of the participants’ perceptions and practices before and after the professional development workshops. The five participating teachers’ subject areas included Te Reo, Maths, Science, Physical Education and Health, and Art and Integrated Studies. All teachers taught a range of levels ranging from Year 7 to 13.

The data was analysed, and similar themes were grouped together and placed into three key categories for further discussion.

The first category identified was Technical Aspects, which was further sub-categorised into access to equipment, access to educational internet sites and issues with student use of iPads. The second main category is Teacher Aspect, which was further categorised into current use of e-Learning in the classroom, e-Learning capabilities, confidence in using e-Learning and availability of time. The final category is Professional Learning.

5.2 Technical Aspects

When analysing the interview data, it became clear that participants were not just commenting on the lack of digital equipment; participants also discussed issues they perceived with students’ use of devices and being denied access to certain internet sites. For this reason, the researcher separated out these different equipment issues and made a section called technical aspects. Previous studies had reported (Ertmer et al., 2012; Herro, 2015) on technical issues which were counteracting the actualisation of utilising e-Learning in the classroom.
5.2.1 Access to equipment

All participants reported being supplied with a school-owned laptop. However, there were major inconsistencies as to what other digital equipment participants had access to for their students' use.

Of particular interest was the way the junior department (Years 7 and 8) shared and worked with equipment. Classrooms are located close to each other and mostly in a separate area of the school. The year 7 and 8 department had been allocated two class sets of iPads. These iPads were centrally located within the year 7 and 8 main classroom learning areas. It was reported by the Year 7 and 8 homeroom teacher that all Year 7 and 8 teachers were able to gain easy access to the use of the iPads when required. In addition, it was noted that good relations existed between the teachers within this department, and booking and use of the iPads was negotiated via verbal communication with each other.

During the interview, this participant outlined that when there was a heavy demand for iPad use, this department worked together to share access. This usually involved sharing the iPads between classes or adjusting their learning programme to accommodate the issue of not having access to enough digital devices. One way of easing this would be to build the use of technology into timetablin and planning.

In contrast, participants from other subject areas reported that they only had a small number of iPads, if any, allocated to their department and/or had no access to others within close vicinity to their learning area.

Although the school had two fully equipped computer rooms for student use and a booking system for their use, participants reported that it was still difficult to get booked in due to demand from other teachers and the fact that one computer room was also being used to teach the subject of ICT. There was also a suggestion that the booking system was overruled in special cases, indicating inequitable sharing of resources, which could create ill feeling between colleagues at the school.
Overall, the majority of participants reported that they did not think they had sufficient access to equipment and used this fact as a reason for the limited use of e-Learning in their classrooms:

It is hard to get computer time. There are not enough iPads. …I would use it more if every student in my class had an iPad or laptop… (Participant 2).

The participants’ responses suggest that the availability of school-owned resources and the computer rooms booking system are not working fairly for all. Participants’ responses lead the researcher to question whether a transparent and equal opportunity for the use of school-owned digital devices existed. These findings suggest that easy access is important as well as good relationships between colleagues in terms of sharing limited resources.

Participants cited difficulty in gaining access to equipment as a reason for not using more e-Learning in their classroom. This appeared to contradict questionnaire data, where one participant was privy to a class set of iPads but still reported low-level use of e-Learning in the classroom on their questionnaire. This suggests that the low use of e-Learning in their classroom could be due to other factors.

Of particular note was that only one participant mentioned capitalising on students’ own personal devices. This seemed interesting because the school has been promoting itself as a BYOD school since 2016, but it would appear that the majority of the participants did not think to make use of the students’ devices, even though they spoke of a lack of school-owned devices. It would be of interest to explore the reasons that teachers were not engaging students with their own devices, especially as many students do bring digital devices to school.

5.2.2 Access to educational internet sites

In addition to digital equipment limitations, Participant 3 also commented on the school-wide restrictions of using content-rich resources, such as YouTube and subject-specific revision sites:
The fact that the school doesn’t actually allow YouTube can be a bit of a problem in some cases, especially when it comes to them (students) wanting to access things like revision sites, videos or links, that can be a bit frustrating (Participant 3).

Furthermore, evidence indicated that there appeared to be a lack of transparency and communication between those in charge of the infrastructure restrictions and teachers who wished to access the restricted sites. Participants were not aware of why certain restrictions were being made on internet sites, such as YouTube, or what could be done to seek a solution to this perceived issue. This indicated that certain participants did not feel they had access to what resources they wanted to use in their classrooms.

5.2.3 Issues with student use of iPads

All participants spoke of ongoing issues for students being able to use the devices. In particular, participants reported that students often struggled to be logged in when using the school-owned iPads. Also, participants reported ongoing issues with students being able to save their work to return to in a later lesson. The participants reported that this created disruptions and frustrations in the classroom and often led to a participant’s reluctance to want to use the devices again in their classroom. The majority of participants questioned whether the iPads and infrastructure were suitable and capable of performing the required tasks.

The school is in the process of moving from Google to Windows 365 School. Participants mentioned that this transition had caused some difficulties in learning a new system. There seemed to be a dislike by some participants of the new system. Most participants expressed concerns that both the teachers and students were struggling to get it to carry out the tasks they required it to do. Moreover, this was disrupting their learning programs making them reluctant to make use of the digital devices. All participants acknowledged that support from an outside provider was available to staff but questioned what or who was supporting and teaching the students how to use the new systems.
One participant indicated on the initial questionnaire that students were struggling to use the new school-wide system of Windows 365 and asked for practical solutions, such as other ways for students to save their work, that were not on Windows 365. Further supporting that students were not finding the task of easily saving their work via Windows 365, and teachers were now looking for alternative ways for students to save their work and return to it at a later date.

5.3 Teacher Aspect

The literature review had identified many reasons for the slow uptake of e-Learning in the classroom. Desimone et al. (2002) suggested that the low levels of e-Learning were a combination of low levels of teacher skills, understanding and knowledge of ways to use digital technologies effectively in the classroom. Again, during the data analyses, it became evident that it was not just one reason but also an accumulation of reasons. Due to this, the researcher separated out the data related to how teachers could have an effect on the low uptake of e-Learning. The most significant seemed to be teachers’ confidence, capability and time availability.

5.3.1 Current use of e-Learning in the classroom

Information from the initial questionnaire indicated that all participants were making very low use of e-Learning activities in their classroom. Four of the participants used e-Learning activities on five or fewer lessons each week. The remaining participant recorded making use of e-Learning between five and ten lessons per week. The maximum they could have chosen was 20 lessons per week.

When asked how they were using the digital equipment in their classrooms, participants reported using digital technology and e-Learning in a more traditional, teacher-directed context, such as directing students to use devices to research and retrieve subject-specific information and using Word documents to type notes instead of writing in their books. Only one participant mentioned using digital devices and
e-Learning in ways that promote higher order learning, for example for student-led collaborative and problem-solving learning activities.

The results from the final questionnaire indicated that one participant, participant 3, increased their use of e-Learning after the workshops. Participant 3 spoke of using resources such as Padlet, Quizlet and Education Perfect. Each of these resources would require a student-led pedagogical approach. In addition, these resources promote student collaboration, problem-solving and student agency. These activities would be deemed higher order learning activities.

Two participants made no changes to the amount of e-Learning taking place in their classrooms, and the remaining participant decreased their use of e-Learning after the intervention. Participant 1 indicated that they had not used any e-Learning activities in their classrooms before or after the intervention. The results indicate a low level of e-Learning was taking place in the classroom.

5.3.2 e-Learning capabilities

The questionnaire asked participants to rank their e-Learning capabilities using the framework from Te Kete Ipurangi before and after the workshops. This allows the professional development programme to be relevant to the participants’ e-Learning capabilities and requirements.

<table>
<thead>
<tr>
<th>Pre-emerging</th>
<th>Emerging</th>
<th>Engaging</th>
<th>Extending</th>
<th>Empowering</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEACHER: You need to build awareness of how digital technologies can enable effective learning or what might be possible.</td>
<td>TEACHER: You find out about digital technologies, and supplement teacher-directed, lower order (surface) approaches of teaching.</td>
<td>TEACHER: You trial and begin to use digital technologies appropriately to support higher-order (deep), collaborative teaching and learning.</td>
<td>TEACHER: You begin to collaborate with students to use digital technologies appropriately to support authentic, higher-order, co-constructed learning.</td>
<td>TEACHER: You work collaboratively alongside students to create personalized, higher-order, real-world learning.</td>
</tr>
</tbody>
</table>


(Adapted from Hall & Ivers, 1997; Meira & Koehler, 2006; Mintzberg (1996); and Templerley, 2007)

This framework carries five phases from Pre-emerging through to Empowering. Pre-emerging would be the start of a teachers’ e-Learning journey, and over time they would progress toward the Empowering phase. The Empowering phase indicates that a teacher is highly skilled and capable in the use of e-Learning in their classroom practice.
The initial questionnaire recorded data indicated that before the workshops, three of the participants considered themselves to be at the Emerging level (Phase 2), and two participants considered themselves to be between the Emerging and Engaging levels (Phase 2 and 3) of e-Learning capability.

After the professional development workshops, participants completed the final questionnaire, data from this indicated that all participants rated themselves higher on the e-Learning capability framework (eLPF), suggesting that all participants perceived that their e-Learning capabilities had improved as a result of taking part in the professional development workshops. All participants now rated their e-Learning capability between Emerging and Extending sections on the e-Learning capability framework (Phases 2.5 to 4).

5.3.3 Confidence in using e-Learning

Responses to the two questionnaires provided mixed results in terms of participant confidence in using e-Learning because of the workshops. Two of the participants felt more confident after the workshops; two other participants felt less confident and one recorded no change. This conflicted with the interview data collected, where all participants who trialled the resources reported feeling more confident in using e-Learning in the classroom.

The data collected from the questionnaires showed that all participants believed that their e-Learning capabilities had improved because of the professional development programme.

This finding indicates that the participants’ e-Learning capability and confidence did not develop at the same time. In addition, this result indicates that the participants’ e-Learning capability is acquired before the e-Learning confidence. Several researchers have fiercely debated this factor as to which comes first, and knowing the answer to this is a key factor when developing a professional development initiative and the success and effectiveness of such programs.
5.3.4 Availability of time

Lack of available time was also cited as a barrier for participants integrating e-Learning into their classroom practices. Participants reported that in addition to attending e-Learning professional development initiatives, time was then required by individual teachers to develop or personalise resources to suit their students’ learning needs and programs. Furthermore, time was then required to incorporate these new e-Learning activities into the classroom and allow time for students to master how to use the e-Learning activities effectively.

During the interviews, lack of time was identified as a barrier to implementation of learning. Participant 1 suggested that they needed to have enough time to go through the resource properly, and be confident about using it before they actually used it in class.

Participant 3 discussed how they believed there was a balance and compromise to be made from the effort and time taken to use e-Learning in the classroom and getting through the required academic learning and program requirements:

Trying to fit it into the lesson so that it was worthwhile bringing them (devices) out, because it takes a while to get the student onto them and set up ready to do the e-Learning activity (Participant 3).

Time was a challenge in creating the actual (e-Learning) puzzles… because I've got to then sift through a lot of them to make sure that they are appropriate for my own students (Participant 4).

In spite of participant concerns with regards to the additional time needed to implement e-Learning in an already busy schedule, three participants indicated that they would like to make the time to continue with this or similar e-Learning professional development workshops, especially when there was an opportunity to reflect on their practice, collaborate and share ideas in a high trust environment. One participant was not keen to continue, citing workload concerns as the reason, and detailed the many
other compulsory requirements that are to be met as a teacher, such as report writing and department meetings.

5.4 Professional Development Aspect

This aspect grouped data that was related to professional development in e-Learning. Some of the reviewed literature identified (Timperley et al., 2008; O’Riley et al., 2014) that effective professional development programmes could lead to improved student outcomes via the improvement of teacher classroom expertise. As well as gathering data on what participants perceived as effective professional development, it also looked at what they considered not to be effective and the reasons why.

Participants indicated that past professional development at the school had not been well received. Participants highlighted the fact they often felt the professional development programmes were not relevant to their classroom practices, and they often found the use of passive learning and large whole school style learning strategic approach unengaging and ineffective. From such, they reported there was little to no change in their teaching practices because of attending such programmes.

In response to a question in the first questionnaire that asked what participants would like to gain from this professional development programme, participants suggested that they would like to learn to use some resources for digital technology in the classroom, such as lesson starters and subject-specific learning.

Two participants again highlighted the issue of students being able to save their work on iPads and devices not being effective for this task.

After the initial questionnaire, workshop two was presented to the small group of participants. Participants reported positively on the workshops undertaken as part of this project.

You learn how to do it first, and therefore I feel more confident doing it (e-Learning) in the class (Participant 2).
When you are just told about an App or e-Learning resource that you could do in the classroom, it's sometimes hard to visualise how it might work (Participant 3).

Participants commented that they often felt that everyone else knew what they were doing, and they were lagging behind but were too afraid to speak up and ask for support or help for fear of being criticised or seen as incompetent.

Being in this group made me see that I am not alone and it feels safe to share my weakness of not knowing how to use e-Learning in the classroom (Participant 2).

When asked in the interviews about how important it was that the professional development programmes were relevant to their own teaching programmes and classroom practices, three participants ranked this as the most important factor. This corresponded with Timperley et al., (2008) findings that professional development that consisted of experts delivering set learnings for teachers without considering their specific needs and individual teacher relevancy is ineffective. In addition, they reported that it affected how engaged they were during a professional development initiative. Other participants expressed the opinion that when they attend any professional development programme, there is the desire and expectation to learn something that can be used in their classroom programmes. If the programme was not deemed relevant to their own practice, they lacked engagement and often completed other tasks, such as roll marking and planning.

This issue of relevant whole school professional development also linked to the time issues highlighted earlier. Participants often felt that they were wasting time that could be better spent on other tasks when attending a professional development session that was perceived as irrelevant to their own teaching practices. This personal relevance link often affected whether or not a participant would engage fully in a professional development programme, and later whether the learning would be made use of back in the teachers’ classroom in the form of changes of pedagogy and e-Learning practices.
When questioned about the use of collaboration in the professional development workshop, participants suggested that they found collaboration to be beneficial on many levels:

It was really good to see how she (another participant) was using Screen-o-matic (the resource) to set up her work. It is easier when your colleagues show you something rather than reading about it or just finding it yourself (Participant 1).

There was a consensus by all participants that actively trialling e-Learning activities and resources in a small collaborative learning group was extremely beneficial to building their confidence and capabilities in using e-Learning in their classroom.

Participants reported that they were able to learn together as well as from each other and enjoyed the process and atmosphere the collaborative learning environment offered. In addition, participants reported feeling more open to sharing their concerns or perceived lack of understanding of how to implement effective e-Learning and how to select a pedagogical style, which best supported e-Learning in their classroom practices.

One of the collaborative benefits highlighted by the group was being able to see how other participants were using an e-Learning resource in their learning programmes. Participants’ discussed how this helped them to see the relevance of the e-Learning and visualise how they could use the e-Learning resource in their classroom environment. This also offered an environment where some of the teachers attending the workshop felt they were the experts. The participants were motivated by having the opportunity to share their skills and classroom practice. All participants spoke positively about the practice of sharing and learning from their peers in a small group environment. Participants described benefits, such as feeling more supported and confident to ask questions or to ask for further help if they did not grasp the concept when shown the first time.
Participants also reported being more reserved about admitting any weaknesses in their practice to more senior leadership members of staff for fear of being judged as incompetent or the information being used against them later. The comments signifying that there are trust issues between the teachers in the classroom and the senior leadership team.

When discussing the second workshop, participants reported that they really enjoyed trialling the e-Learning resources in their classroom and being able to bring their learning back to the group to reflect upon it in a collaborative environment. In this way teacher learning was shared with others, and they were able to celebrate and share their successes, as well as reflect and find solutions collaboratively for problems they had encountered. In addition, they were able to discuss the strengths in regards to students’ engagement and learning outcomes when using a variety of pedagogical methods and learning resources, such as e-Learning.

Whilst using Quizlet, students were engaged and excited, they collaborated with each other. The Quizlet game randomly paired students up with each other, which was a good way to break down boundaries (Participant 5).

Often the successful use of an e-Learning resource by the teacher and observing it increased the students’ engagement in the classroom and served to motivate the teacher to repeat the use and give the teacher the confidence to trial the tool in different situations and with different classes:

I remember Quizlet because I did it in class and it was very successful, that encouraged me to do it again and in different ways. I was motivated by what I was seeing (when introduced into class) and therefore I became a little more excited about using technology in my teaching (participant 2).

All four participants who took a resource back to their classroom reported an increase in student engagement and participation during lesson times.
I took Padlet (back to the classroom) and Screenomatic I already knew how to use it. I took them back as they were easier to manage, it was good, and it was engaging, the kids enjoyed it (Participant 4).

I noticed they (the students) were really engaged. They were having fun and focused (Participant 2).

All participants that reported seeing the students more engaged and enjoying their learning, reported that this observation served to motivate the participant further to trial and implement more e-Learning resources and strategies into their learning programs.

The one participant who did not use any of the tools or resources shared during the workshops cited timing as an issue and reported that she was leaving to start a new teaching position. This response possibly indicated that the use of e-Learning in the classroom was not a common occurrence in this participants’ classroom. Furthermore, at the present time, it was not deemed as important as other things that needed finishing before the participants’ leaving date.

An interesting point made by one participant during the interview was that not all students remained focused on the e-Learning task and that having unrestricted access to the iPad led to some of their students accessing other sites, such as online games, and this resulted in their becoming off-task and not engaged in the activity.

**5.5 Summary of findings**

**5.5.1 Technical Aspect**

According to the findings of this study there appear to be inconsistencies as to what digital technology equipment individual teachers and subject areas have access to for their students’ use. This perception of lack of equitable use of resources was reported to be having impacts on participants’ use of e-Learning in their teaching.
In addition, participants identified the difficulty in reserving a booking for the school’s computer suites. The participant perceived that high teacher demand and an unfair booking system was the cause of this issue.

Furthermore, there were concerns about the whole school system change from Google School to Windows 365, and students being able to save their work on the new system. Digital technology equipment was also reported as not being suitable for the job required, in particular saving students’ online work. All participants indicated that these factors had an effect on their use of e-Learning in their classrooms.

However, when one of the participants did have full use of a class set of iPads, this did not increase their use of e-Learning in the classroom. This suggests that lack of equipment was not the only reason for participants not making more use of e-Learning in the classroom.

The school has been registered and promoted as a BYOD school since 2016, and the majority of students had purchased and were bringing their own devices to school. In informal surveys carried out by the researcher in three different classrooms before the study commenced, approximately 80% of the students indicated that they were carrying devices with them. However, there was no awareness by participants of any whole school strategic plan regarding the implementation of school-owned digital equipment and BYOD policies. Also, little e-Learning professional development had been offered, and when it had, participants had reported it had little to no effect on their classroom practices and programme delivery.

These findings indicate that while students bring devices to school, teachers do not have the confidence or capability to make use of these devices. In addition, the school has set up systems to prevent access to sites that teachers deemed useful for e-Learning.
5.5.2 Teacher Aspect

All participants reported that they saw value in the use of e-Learning as a learning resource in the classroom to increase student engagement and achievement. Nevertheless, participants reported only low levels of e-Learning as currently taking place in the classroom.

The majority of participants reported using the devices for mainly lower level learning tasks, and teacher controlled and directed activity, such as watching subject-specific educational videos and teacher-directed internet information retrieval tasks.

The initial questionnaire data recorded that participants’ confidence in using e-Learning in the classroom and their e-Learning capabilities were low to average. After the workshops, an increase in participants’ perceived e-Learning capability was recorded. Interestingly, no significant increase in perceived confidence in using e-Learning in the classroom was recorded in the questionnaire data. The overall findings from the questionnaires indicated that increasing e-Learning capability did not result in an equal increase in e-Learning confidence in this study.

However, this finding was contradicted with data produced from the semi-structured interviews. During the interview stage, all participants reported feeling more confident in using e-Learning teaching strategies and resources after the workshops had taken place.

5.5.3 Professional Development Aspect

During the interviews, participants were asked to rank in order of perceived importance the five strategic approaches that had been used in the delivery of the professional development workshops in this study. The majority of participants ranked relevance as the most important strategic approach when attending professional development initiatives; active learning and collaboration followed. The opportunity to see how other teachers were using different e-Learning resources and tools in their own classroom
prompted participants to consider, discuss and reflect on how they could use the e-Learning resources or tools in their classroom practice.

All participants who undertook e-Learning activities in their classes reported an increase in student engagement, which further encouraged participants to continue using e-Learning strategies in their learning environment.

Participants reported an increase in student engagement when trialling the e-Learning activities in their learning programme. In addition, participants reported that observing this increase in student engagement made them feel more confident and motivated to trial other e-Learning resources and tools.

Participants indicated that they had low levels of understanding in regards to using a Teaching as Inquiry approach to improve their classroom practice. Participants reported that partaking in the research study enabled them to understand why reflection was important and how to use the Teaching as Inquiry template to drive changes in their practice that result in improved student achievement outcomes.

The majority of participants reported that the professional development workshops had been beneficial to their teaching practice and were keen to continue with meeting as a learning group.
CHAPTER SIX: DISCUSSION AND CONCLUSIONS

6.1 Discussion of findings

In this chapter, the researcher discusses the most significant findings from my research with reference to the literature and the research questions for this study. The focus of this study was to investigate teachers’ experiences and perceptions regarding implementing e-Learning from professional development programmes into their classroom practice. The discussion includes four themes arising from the findings: technical aspect, teacher aspect, professional development aspect and other significant findings. The conclusions and implications for practice follow the discussion, and the chapter ends with recommendations, a summary of areas for further study and the limitations and strengths of the research.

6.2 Technical Aspect

All participants agreed that the school had gone some way to investing in computers and infrastructure that would enable e-Learning to be used as a learning tool in the classroom. However, the actual access to this equipment was cited by the majority of participants as a limiting factor that was preventing the progress of e-Learning in their individual classrooms.

What was interesting is that although access to devices was cited as a reason for not integrating more e-Learning, further investigative evidence indicated that this was not true for all participants. A key finding of this study was that no positive relationship existed between the one participant who did have access to a complete class-set of student use devices and the amount of e-Learning taking place in their classrooms. This suggests that other factors are having a more substantial effect on preventing the teachers’ uptake and increased use of e-Learning in the classroom.

Perhaps some of the most valuable information to come out of this study for the organisation is the reported lack of consistency with digital equipment: what was
available at the school, and the lack of any awareness of the reason why some departments had been gifted class-sets of digital devices or had increased access to the computer rooms while others went without. The lack of consistency with digital equipment could also be seen as a reason for teachers not being supportive or feeling supportive or confident to make strides towards a learning environment that makes effective use of e-Learning.

The reported inconsistency with digital technology allocations and lack of transparency of a strategic plan at the teacher level could be causing resistance to the overall success of implementing e-Learning in the classroom. Zhao et al. (2002) concluded that if the innovation relied upon other people and resources, it lessened the likelihood of success supporting this.

There was also frustration with perceived useful learning sites that had been banned and the change to a new internet school system without apparent consultation between the leadership team and teachers in the classroom. Again, having some transparency about the overall end goal and vision of e-Learning in the school could provide a better understanding and promote discussion that could either allow teachers to understand why certain sites are banned or enable leaders to consider opening up these sites that teachers find to be a useful learning resource.

It was interesting to find that only one participant mentioned the option of using students’ personal devices or other technology even though it is estimated that approximately 80% of students brought a usable device with them to school. In addition, there was little awareness by participants of the fact the school has been a BYOD school since 2016. Addressing the issue of the low number of devices available for use in individual teachers’ classrooms, many schools have adopted a BYOD strategy. Eyre (2015) discusses how BYOD can be a way of overcoming the issue of a limited number of school-owned devices. Making better use of the students who have brought devices could free up and enable re-distribution of school-owned devices, so everyone is equipped and has the opportunity to engage in student-centred e-Learning.
There were also reports by participants that the devices and infrastructure were not, in some cases, fit to complete the job required in the learning environment. Participants described such issues as students not being able to save their work on the new system and students’ lack of digital literacy skills. They highlighted issues with the whole school changeover from a Google School to a Windows School. The findings indicated a lack of support and education about making this change, for both the teachers and the students. Findings indicated there was concern at the lack of skill, understanding and knowledge about using the new system by both the students and the teachers, again providing cause for resistance to making new changes to learning programmes. Based on a key finding from the 2013 NZCER National Survey, Wylie et al. (2013) confirmed similar findings, in that while many teachers saw the benefits of using e-Learning, it is not being frequently used and some of the factors that are slowing down the implementation and increased classroom use are evident at this school, factors such as equipment not fit for the job, issues with internet access, and a lack of support. The support, in this case, is presumably related to teachers, but one could surmise from these results that students are also in need of support to enable the successful implementation and use of e-Learning in the classroom.

One participant reported that students having unrestricted access to an iPad often led some of them to access unrequested sites such as online games. This is interesting and warrants further investigation as it could be due to many reasons, such as students using their own initiative to search the internet for items of personal interest, students not comprehending the task set, equipment issues or maybe not finding digital technology useful and engaging for their learning or lack of digital fluency. Using digital tools to access resources gives students independence and confidence to learn at their pace (Fullan, 2013). However, that does not mean to say that every student will find it an effective or engaging mode of learning. Often, there is the assumption that all students enjoy learning using a computer, but differentiation of learning approaches need to be considered for students who do not find e-Learning engaging or a suitable method of learning.

This highlights the need for student fluency as well as the need to consider teachers’ digital literacy skills. Helen Timperley (2008) highlighted the issue of teacher digital literacy skills; from her research, she extracted key principles from the best evidence
synthesis of research on teacher professional learning and development. One of those principles is that “Information about what students need to know and do is used to identify what teachers need to know and do” indicating the need for teachers also to be digitally fluent to assist their students to become digitally fluent.

6.3 Teacher Aspects

All teachers reported seeing the value of using e-Learning in their classrooms. However, a major finding from the study indicated that only low levels of e-Learning are currently taking place in the classroom. Also, all participants indicated that they viewed their confidence in using e-Learning and their capability to make use of e-Learning in the classroom at a low to average level.

These findings suggest that current e-Learning professional learning and development programmes at the school have not been very effective in increasing teachers’ use of e-Learning in the classroom and improving teachers’ e-Learning confidence and capability. In contrast, the professional development workshops implemented were positively reviewed by participants and resulted in all but one of the participants taking the learning back to their students’ learning environment. This finding corresponds with Desimone et al. (2002) research which examined the effects of professional development on teacher instruction. They highlighted the positive effects of using a more active and collaborative professional learning approach over a passive style professional learning approach.

One participant spoke of her concern in regards to moving away from a teacher-controlled environment to a more student-centric and personalised e-Learning environment to develop in their classrooms. During more detailed questioning in the interviews, it was suggested that she was concerned students would not be able to manage their learning and keep to the fixed timeline that NZQA examinations operate on. In addition, she reported to feeling overwhelmed by a fear of not knowing how to transform into a ‘21st century’ teacher, and a sense of “everyone else knows but me”. This suggests a need to have more personalised and supportive professional development programme that caters for individual needs and capabilities.
Time to develop capability and confidence in the use of e-Learning was counter-argued with the restraints of teachers’ responsibility towards academic requirements and academic deadlines making it difficult to spend time trialling new pedagogy and learning resources. Andrews, Leonard, Colgrove and Kalinowski (2011) make mention of this issue and the difficulty some teachers have implementing new learning approaches due to the constraints of time. This issue has been cited as a reason why some teachers consider a traditional teaching approach to be the most efficient and reliable way to impart course content (Smith et al., 2005).

Only one participant mentioned using e-Learning resources that promote deeper-learning experiences, such as collaboration and problem-solving. This indicates that at present, the use of digital technologies in the classroom is being used more of a replacement for the library, teacher instruction or textbook, rather than being used to develop students’ higher learning skills and creation of new knowledge. This corresponds to the findings by Bunting et al. (2013), who suggested that teachers are much more likely to use ICT for retrieval and sharing of information than for the creation of new information and to further deep learning cognitive exercises. The majority of the participants indicated that the use of technology in their classroom was primarily supportive of lower-ordered thinking, and learning skills and teacher instructional purposes, such as students using the internet for information retrieval and watching educational videos selected by the teacher.

6.4 Professional development

All participants saw benefit from implementing e-Learning in their learning programs and classroom activities. However, there was criticism about the way e-Learning professional development programmes were currently being delivered at the school. All participants indicated that current professional development programmes at the school were not very effective in supporting changes to their e-Learning classroom practices. This was further highlighted by the fact that participants were able to provide examples of previous exposure to resources during professional development initiatives and not making use of them in their classroom, again suggesting that the
passive nature and lack of foreseen relevance to their own classroom practices could be a deciding reason for only low levels of e-Learning currently taking place at the school.

Furthermore, participants reported that the passive nature of information being delivered was detrimental to their engagement and all participants reported that previous e-Learning professional development had not had an impact on their use of e-Learning in the classroom. Participants reported previous in-house professional development often gave instructions of ‘do what I say’ but offered no real support or deep learning experience of how to ‘do as I say’. Further supporting the importance of this response, participants ranked relevance to one’s practice and having time and hands-on opportunities to try the resources before taking them back into the classroom as the most important elements they were looking for when attending a professional development programme.

Supporting the need for specific action and applied practice to be utilised during in-house professional development e-Learning initiatives, teachers cited a preference for active learning professional development programmes as opposed to passive ones. These findings are similar to Ertmer et al. (2012) who provided evidence to support the use of active learning by concluding that the more a professional development programme is aimed at developing teachers’ knowledge, skill and confidence in using technology in the classroom, the greater the likelihood of change in teachers’ practices.

The impact and effect of the study’s professional development workshop experience on the teachers’ pedagogy and e-Learning practices proved successful in a number of areas.

The professional development workshops resulted in the majority of teachers taking back some of the e-Learning resources and using them in their classrooms. This was a major aim of the professional development workshop and a deciding factor as to whether the professional development workshop was deemed effective or not. The study found that those teachers who trialled some of the e-Learning resources in their classroom reported observing an increased student engagement and motivation in their learning environment. This observation by the participating teachers served to
motivate and increase the confidence of the participants to try other e-Learning resources and/or repeating the use of the current ones. These findings support those of Bolstad et al.’s (2012) study, where e-Learning has the potential to increase student engagement, and the effect of teachers seeing their students more engaged and having fun in their lessons motivates them to further develop and extend their e-Learning skills.

Timperley et al. (2008) highlight the important link between teacher learning and its value on improving students’ learning outcomes. In such, the requirements for schools to provide effective in-house professional development programmes needs be a top priority in a school, which is determined to provide students with the opportunity to fulfil their potential and improve student achievement outcomes.

The research study suggests that making use of the aspects chosen in this research, that is, active learning, relevance, collaboration, reflection, and time for future in-house professional development programmes could prove beneficial for increasing teacher engagement and e-Learning capabilities. In addition, there appears to be an increased likelihood that the majority of teachers will take the e-Learning experiences and resources back into the classroom for the benefit of the students.

There was some discrepancy between the interview and questionnaire data on the idea of confidence. Although participants expressed verbally during the interviews how taking part in the professional development workshops had made them feel more confident to use e-Learning again in their classroom practice, the same was not recorded in the questionnaire. The results from the questionnaire indicated that there were no significant changes in participant confidence when using e-Learning before and after the professional development workshops when asked to rank their perceived level of confidence. These two results indicate a discrepancy in the findings from the interviews and questionnaires regarding the level of confidence, which highlights the importance of using more than one approach when collecting data.

This discrepancy could be due to the nature of the interview being a more personalised experience, allowing for a deeper clarification of the question being asked. During the interview, participants spoke in detail about what they had done and what they had
observed; this reflection served to enable them to realise they now felt more confident. On the other hand, the questionnaire was impersonal and had not given the opportunity to revise and reflect with one another about the progress they had made.

A significant finding was that all participants believed they were more capable of using e-Learning in their classroom after the professional development workshop. This suggests that e-Learning capability and confidence develop separately from one another, and capability comes before confidence. This corresponds with the finding by Guskey (2002) who also suggests that changes in teacher beliefs follow rather than precede any changes in behaviour. By engaging in an experimental environment, teachers experiment and change their behaviour, and it is after this stage that teachers are then able to see the effects of the change. This then changes their belief, or in this case their confidence in the use of e-Learning as a learning tool in the classroom.

This type of small group professional development workshop also provided support for when things did not work out, and a safe environment where teachers were able to reflect on their practice. Participants valued a collaborative style and active learning environment where they not only learnt from the person in charge of leading the professional development programme but also from others in the group.

Furthermore, participants reported to feeling less intimidated in sharing their so-called weaknesses and lack of action from not knowing where to start. If teachers do not feel supported, then this can lead to resistance to change from teachers. Powell and Barbour (2011) also highlighted this issue and concluded that professional development in e-Learning across New Zealand schools has not been sustained, and as a result, many teachers lack confidence and competency.

The use of the TKi e-Learning planning framework could provide a useful tool for schools to measure and monitor teachers’ e-Learning capability and use of e-Learning in the classroom. The framework could be used to provide an overview of where teachers and the school are currently at and provide relevant information on ways to progress forward. Furthermore, it could identify experts already at the school and provide information for a suggested grouping of a professional development programme suited to individual teachers’ current classroom use and level of e-Learning,
capability. Not only would this put like-minded learners together, but it would also allow everyone to see what was required to reach the next level of expertise and show clearly, what the overall aim is for improvement.

It could be useful for the school to use it to develop and share a whole school strategic plan and allow everyone to see the vision for the near future, particularly regarding funds, time, and planning and resource distribution.

Current use of pedagogies are often ill-suited to a new and more modern learning environment and are in need of change (OECD, 2013). This indicates that teachers need to experience and have time to practise and adapt their programmes to offer more suitable pedagogies to make effective use of e-Learning in their classrooms. The professional development workshops were modelled using pedagogies that have been shown to be more appropriate for e-Learning in the classroom. Fullan (2013) suggests the method of allowing teachers to experience suitable e-Learning pedagogy assists with the progression of equipping teachers with new technology pedagogies. All participants spoke highly of using these strategic approaches. They were able to gain an insight into how e-Learning could be implemented within their classroom environment and what pedagogies would better provide support for using e-Learning in the classroom.

Participants reported that it was very useful for them to gain hands-on experience and see how others were using the e-Learning resources and provide an opportunity to share skills, learn from others and reflect on their practices. Ertmer et al. (2012) support this idea and argue that the more professional development initiatives are aimed at developing a teacher’s knowledge, skill and confidence in using technology in the classroom, the greater the likelihood of change in teacher practices. Modelling active learning processes, such as collaboration, hands-on practice and problem solving were a prime focus of this study, and the results indicate that this action in a professional development initiative was successful in being able to change teachers e-Learning practices and selection of an effective pedagogy to increase the likelihood of successful implementation of the e-Learning activity within their classroom setting.
It is important to address the issue of suitable e-Learning pedagogy, in addition to learning new e-Learning tools and applications, because there is the suggestion that implementing new technology in the classroom will fail unless it is supported by new styles of pedagogy that are more suited to the e-Learner and a more personalised learning program that technology enables (Brown, Anderson & Murray, 2007; Cuban, 2001). The professional development workshops allowed participants the opportunity to explore, experience, share and model new e-Learning resources and to experience pedagogies which offer a more personalised and learner-centric experience. Fullan’s (2013) research supports this finding and suggests that a method that allows teachers to experience different pedagogies will assist with the progression of equipping teachers with suitable e-Learning pedagogies.

At one stage during the first workshop, one participant already had experience of one of the e-Learning resources being explored. This allowed the participant to support others and discuss how they had used it within a classroom setting. The conversation opened into the use of the tool, and the sharing of ideas and reflections of classroom practices related to student-centred e-Learning. Often there is a strict timeline and agenda to be followed by the leader of the professional development programme. The school may benefit from offering more opportunities for a shared experience that offers flexible learning outcomes and a more distributed leadership of learning. Within this school, for example, there are many experts and little recognition of their skills and the benefit their shared knowledge and skills could be used in a more purposeful and useful manner. Hargreaves and Fink (2004) indicated that sharing leadership builds trust and develops leadership capacity within a school. Cruz’s (2009) thinking resonated with this view by stating that when a principal collaborates and shares authority, school members have an increased interest in and responsibility for obtaining mutually agreed upon objectives. This suggests that a more distributive leadership approach could be more effective in gaining school community support in making increased use of e-Learning in the classroom.

Moreover, Fullan (2014) also argues that top-down leadership is ineffective and conducive to resistance to change. Also, being able to share with others in a small group the context of the resource is a powerful way to help support novice e-Learning teachers. Fullan (2014) further supports this idea of shared leadership, concluding that
offering teachers more autonomy offers a pathway that increases teachers’ motivation to continue to try new teaching ideas and develop their own skills and expertise further. This idea was further supported by the research study: when asked, the entire group said they would be willing to present the professional development workshops to others at the school with support from others in the group. This also indicated that building a supportive collaboration enhanced their willingness to lead, as there is safety in numbers. On another level, it indicated they had the belief, capability and confidence now to do so. This corresponds to the findings by Robinson et al. (2009) which showed that leaders who collaborate directly with teachers have a greater impact on innovation and motivation.

In-house peer to peer sharing, collaboration and knowledge building and creation has many advantages and is often overlooked as a valuable source of expertise. These professional development workshops highlighted the value of building trusting and collaborative relationships between teachers within the school. This could open up a wide area of expertise and repeated exposure to new and unfamiliar learning, which, in time, turns a novice into an expert, and so has the added benefit of empowering both the learner and the teacher, as well as having the potential to build positive, collaborative and symbiotic working relationships between teachers and subject areas, and expanding the knowledge and teacher practices of the whole school. Recognising good practice builds trust and support (Bolstad & Gilbert, 2006), as well as innovation being strengthened by leaders who recognise and acknowledge e-Learning practices already occurring at the school (Zhao et al., 2002), and, as a result, teachers are more likely to participate in change.

There was no mention by any of the participants of professional development that had shared a whole-school strategic plan or awareness of a whole-school shared vision as to the future of e-Learning in the classroom. This is a point highlighted by the Organisation for Economic Cooperation and Development (OECD) (2013), whose findings suggest that allowing teachers to understand the benefits that such innovations can bring to the organisation can be an important factor for teachers becoming intrinsically motivated. It could be beneficial to share the vision for the school about e-Learning, and how it can increase value for the school as a whole.
6.5 Conclusion

The aim of this research was to investigate teachers' experiences and perceptions regarding implementing e-Learning from professional development programmes in their classroom practice.

The study suggests that current use of e-Learning in the classroom is low. The participating teachers had little successful experience in implementing e-Learning from professional development programmes into their classroom practices. The study also indicated that the participants perceived their confidence and capability of making effective use of e-Learning in the classroom to be limited.

The study also concluded that infrastructure issues and technical restrictions were also preventing the increased use of effective e-Learning in the classroom. There appeared to be a lack of transparency over device allocations and it was suggested that an unfair booking system for school owned devices existed. Furthermore, the study indicates that the school is not utilising a BYOD initiative despite the fact a high percentage of students are bringing their own devices to school.

The study indicated that there is a lack of teacher agency and relationships between the classroom teacher and the leadership team were limited. In addition, there was a lack of awareness of any whole school vision or strategic plan regarding the implantation of effective e-Learning at the school and BYOD. Most of the professional development programmes were delivered by the leadership team and outside experts, indicating that the school was not optimising existing experts already at the school. Furthermore, the study highlighted a need to support and equipment students with the knowledge and skills needed to use school owned devices effectively.

Participants indicated they were keen to improve their use, capability and confidence in using e-Learning. Participants viewed the aspects chosen for the in-house professional development workshops in this study as useful, and it led to four out of five of the teachers making use of the e-Learning resources in the classroom.
CHAPTER SEVEN: RECOMMENDATIONS, STRENGTHS AND WEAKNESSES OF STUDY AND AREAS FOR FURTHER STUDY.

A major goal of practitioner research in terms of this study is to generate local knowledge, which can then be fed back into the environmental setting (Herr & Anderson, 2014). The complete study, including the recommendations, will be shared with the school leadership team and staff members.

7.1 Recommendations

The recommendations are based on the findings of this research study. They offer suggestions that might lead to changes in future in-house e-Learning professional development practices; also, other barriers are identified and addressed with the aim of promoting an increase in e-Learning in the classroom and at the school as a whole.

The first recommendation is focused on in-house professional development programmes. The research study recommends that time is spent finding out from teachers what they need from their professional development programme and then to design programmes that will be relevant to their practice. The professional learning leadership team could improve the professional development and learning programs at the school by gaining and responding to teacher feedback to establish what would be relevant to teachers’ learning needs. This information could be gathered from informal discussion, questionnaires, teachers’ voices, Teaching as Inquiry approaches and the e-Learning planning framework.

In addition, the research recommends that other delivery methods are reviewed, and future in-house professional development programmes consider using approaches, such as active learning, collaboration and reflection in a manner that are authentic and allow for a reflective approach. This could be achieved by having small learning groups, focussed on similar Teaching as Inquiry interest groups.

Furthermore, time is assigned for teachers to explore e-Learning resources and suitable pedagogical approaches before they expose them to the students in their learning environments. Many of the participants were seeking to improve their
e-Learning practices, and many are already experts and using some e-learning resources effectively in their classroom. A possible approach to professional learning within schools is to make use of those teachers who are using e-Learning experience effectively to support those who need guidance. This could enable schools to become aware of the current e-Learning experts at the school and provide a more individualised collaborative and supportive environment for those teachers who could benefit from more support and guidance. Also, it would teach teachers to recognise stages necessary to achieve and progress to, track changes and reward contributions by staff.

The findings from this research study suggest that teachers could benefit from seeing the direction a school is heading with regards to e-Learning at a school. A collaborative and transparent strategic plan and school vision would allow teachers to become aware of where a school is heading and encourages ownership of the progress the school makes in that direction. Furthermore, it could encourage some whole school discussions as to why some departments have equipment, some have not, and why certain websites are banned. A review of the current booking systems for digital equipment would also be beneficial to ensure a fair system is in place. Furthermore, a whole school discussion and plan on how to optimise student BYOD could result in freeing up limited school-owned equipment.

The final recommendation focuses on the teachers’ and students’ basic digital competency skills. The school as a whole could benefit from implementing a program of learning and giving time to ensure that all staff and students are equipped with the necessary understanding and are competent in using equipment, such as iPads and programs such as Windows 365 before they are expected to use them in their classrooms.

### 7.2 Limitations of the study

One of the major differences between qualitative and quantitative study is that although qualitative study offers the potential to generate knowledge that can be facilitated back into the environment which is being studied (Herr & Anderson, 2014), it does not offer the right to presume the findings from this current project would be transferable and
yield similar results in a similar situation or context. Thus, this limits the use of the research project to only being able to confidently state that the findings are true to this individual situation.

Limitations in this investigation can also be linked to the fact that the sample size was small and made up of participants who had an interest in the subject matter. Further data collection would be required to determine exactly how other teachers view and use student-centred e-Learning in their classrooms, and the intervention that would need to be rolled out to all to give an accurate conclusion on its effectiveness as a school-led professional development initiative. However, the knowledge that has been produced can be a benefit to the school to enable conversations and actions to promote a larger scale research project and intervention.

Time constraints should also be highlighted; participants’ time to trial and integrate new learnings into their classroom was short, and the professional development programme consisted of only two workshops over a two-week period. It was envisaged that if positive results were gained, it would enable a longer-term project to be instigated later. In support, it is hoped that the participants would be able to share their experiences and new understandings with others and report a positive experience about using student-centred e-Learning in the classroom.

The method of data collection could also be seen as a limitation. Interviews gain a personal perspective and a view of the participant at that moment in time (Silverman, 2013). These are not fixed and can often change; this was highlighted in the area of teacher confidence in using e-Learning. However, interviews backed up with questionnaires do give the opportunity to discover whether the problem has a quick solution or if further study is needed (Silverman, 2013).

Practitioner-research requires specialised skills, which can be challenging for an inexperienced researcher. It can be particularly challenging using the school that the researcher already works at and providing research on colleagues and school processes because these are working relationships and already formed, and one often has to be critical of already formed systems. The research is also limited as it is only the views of one practitioner and at one school only. Qualitative research often has an
element of bias as it is often built on personal views and preferences (Robinson & Lai, 2005). For example, when expressions of interest was first requested, the researcher predicted that those that had an interest relating to student-centred e-Learning would be more inclined to volunteer and get involved in the intervention, while those that had no interest would not volunteer. Therefore, those teachers keen on e-Learning and/or professional learning opportunities would be over-represented in this study.

The researcher's own views also needed consideration and restraints, being mindful not to bias towards probing positive comments over negative ones (Robinson & Lai, 2005). This can be difficult as often the subject under study is one the researcher feels passionately about. Using a team of practitioners conducting research together and involving other schools could promote a more unbiased form of study.

### 7.3 Strengths of the study

There are also many strengths to the research. The chosen problem for the research was relevant to this current school and can be used by leaders to inform further professional development programmes and e-Learning strategies for implementation.

In addition, it allowed participants time to reflect on their current practices, build relationships with other subject teachers, and share ideas, knowledge and admit their weaknesses in a small high-trusting collaborative environment. All of these seek to provide support and enable participants to have the confidence and capability to make use of e-Learning in their own classroom practices.

### 7.4 Areas for further study

Based on the conclusions and recommendations in this report, the next step in this study will be to engage in a new cycle of inquiry. Evaluation from this research indicates that areas of interest could be developed in research with a pedagogy that further supports e-Learning.
In addition, further investigation of the effects of in-house e-Learning professional development with a larger sample size and inquiries into the effectiveness of digital technology on improving student-learning outcomes could be carried out.
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Appendices

Appendix A: Information sheets and consent forms

Information for Principal

My name is Alison Digweed. I am currently enrolled in the Master of Applied Practice degree program at Unitec New Zealand and seek your help in meeting the requirements of research for a Thesis course which forms a substantial part of this degree.

Research Project Title  Professional Development: New pedagogies and e-learning to promote student-centred learning environments

Synopsis of project
This project will provide an opportunity for participants to be engaged in a collaborative professional development programme. The programme will focus on supporting teachers to trial classroom activities that encourage the development of new pedagogies that promote student-centred e-learning. There will be some discussion and questionnaires relating to teacher practices, perceptions and pedagogy and perceived current capabilities on authentic student-centred e-learning. This information will be collected by questionnaire before and after the intervention to explore how best to support the teacher’s journey through changing their practice. The participants will also be interviewed after the project.

What we are doing: Offering a professional development programme to five volunteer teachers at the school. The programme consists of two active learning professional development workshops and with support, implementation of two e-learning activities that promote student-centred learning into their classroom. The project will be collaborative, supportive, and will require participants to reflect on their experience.

What it will mean for participants:
Complete questionnaire before and after the project.
Be interviewed after the intervention.
Attend two after school workshops, work collaboratively with others in the group.
With support, actively transfer and trial new learning to classroom.
Approximately 8 hours in total.

I invite you to give permission for this study to be conducted in your school. If you agree to the school participating in the study, you will be asked to sign a consent form. This does not stop you from changing your mind if you wish to withdraw from the project. However, because of our schedule, any withdrawals must be done within 2 weeks after
the participants have completed the initial questionnaire.

While the teachers’ identities will be kept anonymous, it is possible that the College will be identified since the teaching environment is very small in the Waikato and I work at the college the research is taking place in. Therefore, permission is requested to make the research transparent and name the school within the research.

All information collected during this study will be confidential and will be stored on a password protected file and only the participants, the researcher and the supervisors will have access to this information.

Please contact us if you need more information about the project. My supervisor is Dr Lisa Maurice-Takerei, phone 815-4321 ext 7338 or email lmauricetakerei@unitec.ac.nz

UREC REGISTRATION NUMBER: This study has been approved by the UNITEC Research Ethics Committee from 5th July 2017 to 5th July 2018. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Committee through the UREC Secretary (ph: 09 815-4321 ext 8551). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.
Principal's Consent Form

Research Project Title: Professional Development: New pedagogies and e-learning to promote student-centred learning environments.

I have had the research project explained to me and I have read and understand the information sheet given to me.

I understand that the College does not have to be part of this research project and may withdraw within 2 weeks after the completion of the initial participants’ questionnaire.

I understand that everything that participants say is confidential to the group and none of the information that participants choose to be confidential will be shared. Participants in the project will be anonymous to all those who are not directly part of the project and no information will identify the participants. I understand that the only persons who will know what has been said will be the researchers and their supervisor. While we will strive to keep all identities anonymous Te Kauwhata College will be identified since the teaching environment is very small in the Waikato and teachers know each other.

I also understand that all the information that I give will be stored securely on a computer at Unitec for a period of 5 years.

I understand that discussion with the researcher will be taped and transcribed.

I understand that I can see the finished research document.

I have had time to consider everything and I give my consent for this project to take place at Te Kauwhata College.

Principal's Name: …………………………………………………………………………………

Principal's Signature: ………………………….. Date: ……………………………

Project Researcher: A.Digweed Date: 5th June 2017

UREC REGISTRATION NUMBER: This study has been approved by the UNITEC Research Ethics Committee from 5th July
2017 to 5th July 2018  If you have any complaints or reservations about the ethical conduct of this research, you may contact the Committee through the UREC Secretary (ph: 09 815-4321 ext 8551). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.
Information for participants

My name is Alison Digweed. I am currently enrolled in the Master of Applied Practice degree program at Unitec New Zealand and seek your help in meeting the requirements of research for a Thesis course which forms a substantial part of this degree.

Research Project Title Professional Development: New pedagogies and e-learning to promote student-centred learning environments

Synopsis of project
This project will provide a professional development intervention to a small group of teachers at one school in New Zealand. The intervention will focus on supporting teachers to implement new classroom activities that encourage the development of new pedagogies that promote student-centred e-learning. Data on teachers’ practices, attitudes and pedagogy and current capabilities on authentic student-centred e-learning will be collected by questionnaire and before and after the intervention to explore how best to support a teacher's journey through transforming their practice. All participants will also be interviewed after the intervention.

What we are doing: Participating in two active learning professional development workshops and with support, implementing two e-learning activities that promote student-centred learning into your classroom. The intervention will also require you to collaborate, support, inquire and reflect on your experiences with others within this group.

What it will mean for you
Total time commitment will be a maximum of 8 hours.
Complete a questionnaire before and after the intervention.
Attend two after school workshop and work collaboratively with others in the group.
Choose one of the activities offered during each workshop and, with support from the researcher if needed, actively transfer and trial new learning to classroom.
Complete an interview after the intervention
Interviews 1.5 Hours. Questionnaire 40 Mins. Participation in Professional Development workshops 4-5 hours.

If you agree to participate, you will be asked to sign a consent form. This does not stop you from changing your mind if you wish to withdraw from the project. However, because of our schedule, any withdrawals must be done within 2 weeks after the initial questionnaire has been completed.

The research aims to provide evidence for the production of a model for effective professional development program with regards to new pedagogy and student-centred
learning. The school will be identified. Your name will not be used and any information you share will not be individually identified. It is also important that you respect the other participants' privacy and keep information they have shared confidential. All information collected from you will be stored on a password protected file and only you, the three researchers and our supervisors will have access to this information.

Please contact us if you need more information about the project. At any time if you have My supervisor is Lisa Maurice-Takerei, phone 815-4321 ext 7338 or email lmauricetakerei@unitec.ac.nz

**UREC REGISTRATION NUMBER:**
This study has been approved by the UNITEC Research Ethics Committee from 5 July 2017 to 5 July 2018. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Committee through the UREC Secretary (ph: 09 815-4321 ext 8551). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.
Participant Consent Form

Research Project Title: Professional Development: New pedagogies and e-learning to promote student-centred learning environments.

I have had the research project explained to me and I have read and understand the information sheet given to me.

I understand that I don't have to be part of this research project should I chose not to participate and may withdraw 2 weeks after the initial questionnaire has been submitted.

I understand that everything I say is confidential and none of the information I give will identify me and that the only persons who will know what I have said will be the other participants, researchers and their supervisor. I understand that information shared by other participants during the project is confidential and I agree to keep it confidential. I also understand that all the information that I give will be stored securely on a computer at Unitec for a period of 5 years.

I understand that my discussion with the researcher will be taped and transcribed.

I understand that I can see the finished research document.

I have had time to consider everything and I give my consent to be a part of this project.

Participant Name: ……………………………………………………………………………………

Participant Signature: ………………………….. Date: ……………………………

Project Researcher: A.Digweed Date: 5th June 2017

UREC REGISTRATION NUMBER:
This study has been approved by the UNITEC Research Ethics Committee from 5 July 2017 to 5 July 2018. If you have any complaints or reservations about the ethical
conduct of this research, you may contact the Committee through the UREC Secretary (ph: 09 815-4321 ext 8551). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.
Appendix B: Questionnaires - question schedule

Questionnaire One
1. What devices do you have access to at school?
2. What devices do you have that belong to you?
3. How confident do you feel with using digital technology for teaching and learning? (1-5 scale).
5. Please give a few examples of the way that your students use the devices.
6. Please look at the 5 phases below. With regards to you e-learning capabilities, where do you consider yourself?

<table>
<thead>
<tr>
<th>Phase</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-emerging</td>
<td>TEACHER: You need to build awareness of how digital technologies can enable effective learning or what might be possible.</td>
</tr>
<tr>
<td>Emerging</td>
<td>TEACHER: You find out about digital technologies, and supplement teacher-directed, lower-order (surface) approaches of teaching.</td>
</tr>
<tr>
<td>Engaging</td>
<td>TEACHER: You trial and begin to use digital technologies appropriately to support higher-order (deep), collaborative teaching and learning.</td>
</tr>
<tr>
<td>Extending</td>
<td>TEACHER: You begin to collaborate with students to use digital technologies appropriately to support authentic, higher-order, co-constructed learning.</td>
</tr>
<tr>
<td>Empowering</td>
<td>TEACHER: You work collaboratively alongside students to create personalized, higher-order, real-world learning.</td>
</tr>
</tbody>
</table>

Source: http://www.elearning.otago.ac.nz/Professional-Learning/Teaching-and-Learning-Planning-Framework

(Adapted from Hall & Hope, 1987; Mishra & Koehler, 2006; Mantich (1996); and Timperley, 2007)

7. Where do you see that technology could be used most effectively in your subject area?
8. What would you like to gain from this professional development project?
9. Any other comments that would be useful to know?

Questionnaire Two

1. Did you attend both workshops?
2. What tools and resources shared during these workshops were useful?
3. Which tools and resources did you use in your lessons?
5. Did you notice any changes in your students’ classroom behaviours during this time?
7. Please look at the 5 phases below. With regards to you e-Learning capabilities, where do you consider yourself?
<table>
<thead>
<tr>
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</tbody>
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(Adapted from Hull & Hoce, 1997, Mishra & Koehler, 2006, Moore (1990); and Timperley, 2007)

7. Would you feel comfortable in sharing this professional development workshop to your peers?
8. Any other comments that would be useful to know?
Appendix C: Semi structured Interview - question schedule

1. What do you remember about the PD and why do you think you remembered that? (link to previous learning during project write up/ discussion)
2. Did you take anything back to your classroom? What how why
3. Did you experience any changes in your pedagogy during this time?
4. Were they any changes in the student's attitude and behaviour during this time?
5. What challenges did you experience during this project?
6. What successes did you experience during this project?
7. This professional development intervention contained several initiatives combined into one
   A) Relevancy to your requirements
   B) Active learning
   C) Collaboration and sharing ideas
   D) Reflection
   E) Time
   Can you talk a little about how you found each of these in regards and rank which you found most useful?
   8. Do you think this style of professional development would lead to sustained changes in your practice? What changes? Why is that?
   9. How could professional learning programs help you further?
   10. What would make professional development initiatives useful for you?
   11. What do you see are your next steps?
   12. Have you changed your mind on what e-Learning is and how you can use it?