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APMG9150: RESEARCH THESIS

Curtis Young

Student ID: 1368759

The use of eLearning, blended learning and digital literacy tools to
improve student engagement at Cut Above Academy, increasing
student retention and student success

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ABBREVIATIONS

Bring your own device, (BYOD)
Cut Above Academy, (CAA)
Competency based training (CBT)
Department of Management and Marketing, (DoMM)
Distance education, (DE)
Distance learning, (DL)
Emotional intelligence, (EI)
Hairdressing Industry Training Organization, (HITO)
High definition television, (HDTV)
Human resources, (HR)
Human resource management, (HRM)
Information and communications technology, (ICT)
Knowledge management, (KM)
Learning management system, (LMS)
Liquid crystal display, (LCD)
Massive open online courses, (MOOCs)
New Zealand, (NZ)
New Zealand Association of Private Education Providers, (NZAPEP)
New Zealand Association of Registered Hairdressers (NZARH)
New Zealand Qualifications Authority, (NZQA)
Organizational development, (OD)
Organizational learning, (OL)
Organizational transformation (OT)
Point of sales, (POS)
Private tertiary education, (PTE)
Research and development, (R&D)
Return on investment, (ROI)
Socio-technical system, (STS)
Special effects, (SFX)
Tertiary education commission, (TEC)
Unitec student union, (USU)
Vocational education and training, (VET)

FOCUS GROUPS AND INTERVIEW PARTICIPANTS

FG1UPGS; Unitec post-graduate students

FG2CAAM; CAA management

FG3CAAT; CAA tutors

CAAT, Cut Above Tutors

CAAS; Cut Above students

EAA; eLearning Academic Advisor

IR1SO; Industry representative 1, salon owner

IR2HAR; Industry representative 2, hairdressing association representative

IR3USR; Industry representative 3, Unitec student representative

Accepted spellings of brand name internet companies and ICT applications

app

Dropbox

ebook

eLearning

ePortfolio

Facebook

Google+

iPad

iPhone

iPod

LinkedIn

Pinterest

PowerPoint

Snapchat

Tumblr

Twitter

WiFi

WordPress

Abstract

The main purpose of this research has been to establish whether or not the adoption of blended learning and digital literacy tools may increase student engagement in a trade based training environment, therefore improving student retention and student success.

Cut Above Academy, (CAA) a private tertiary education, (PTE) provider, has been used as a case study to assess the viability of an eLearning innovation. The research has adopted a business theory approach, which employs change management theory and innovation theory.

CAA's business goals are to improve student retention and student success. A literature review has indicated that boosting student engagement will improve student retention and student success. The literature review has demonstrated a positive link between new technology and student engagement.

The proposal of this research is for CAA to initiate an eLearning innovation with a Learning Management System, (LMS) and the internet on campus. An eLearning strategy would be a process innovation in the current approach to delivering education which will add value to the service experienced by customers.

A phenomenological approach has been used with qualitative research. In-depth interviews have been conducted to analyse the willingness of staff and students to adopt the change. Industry representatives have been interviewed to establish a graduate profile and eLearning experts from Unitec have been interviewed to benchmark change management strategies for eLearning.

Recommendations have been provided for a process innovation strategy. Recommendations have been made for the human resource management, (HRM) impact of developing staff capabilities in information and communications technology, (ICT) and digital literacy.

This research has been conducted during the previous ownership of CAA. New leadership represents an opportunity to revise the strategy for eLearning.

This research has concluded that an eLearning program with digital literacy tools training is not only beneficial for a training institution with the goal of increasing student success; it is essential.

1.0 CHAPTER ONE - INTRODUCTION

The working title of this thesis is;

Could the use of blended learning and digital literacy tools improve student engagement at Cut Above Academy, resulting in increased levels of student retention and student success?

Cut Above Academy, (CAA) is a private tertiary education, (PTE) provider supplying Level 2, 3 and 4 courses in; hairdressing, makeup; beauty therapy; nails and special effects, (SFX) production. CAA's courses are New Zealand Qualifications Authority, (NZQA) assessed.

CAA has been used as a case study to analyse the change impacts of an eLearning innovation in an education provider, using a phenomenological approach.

Chapter 1 presents an overview of the thesis contents.

1.1 Background to project

CAA has approximately 650 students per annum and 35 tutors. It is located in 242 - 246 Queen St, with a second campus in Manukau.

Stakeholders;

- *Learners*
- *Staff and management*
- *Future employers of trainees in target industries*
- *Tertiary Education Commission, (TEC)*
- *Hairdressing Industry Training Organisation, (HITO)*
- *New Zealand Qualifications Authority, (NZQA)*

Main competitors;

- *Servilles Academy*
- *Premier Academy.*

Areas of concern to staff and management have been identified as follows. Tutors have worked hard to keep learners stimulated by the course, but have identified out of date

resources and a lack of modern technology, such as internet access, computers and projectors, as a source of frustration. NZQA requires a large number of theory lessons to be delivered and tutors have found it challenging to make these lessons interesting with traditional whiteboard delivery.

CAA management is focussed on reducing the number of students who drop out of the course (retention) and improving pass rates (outcomes).

A potential solution for boosting student engagement could be to improve classroom technology and develop more engaging content. A literature review has been performed to assess whether technology may increase student engagement. The literature review has also addressed whether improving student engagement could have an impact on management's business goals of increasing retention and outcomes.

Key issues;

- *Staff*; student attendance and a lack of modern teaching resources.
- *Management*; student retention and student success.

The literature review has attempted to establish if there is a link between staff concerns over the lack of classroom technology and management goals of improving retention.

1.2 Overview of research

The contents of each chapter have been summarised in this section.

CAA is New Zealand's, (NZ) largest provider of education for the hairdressing, makeup and beauty therapy industries. Key business goals have been identified as student retention and student success. Improved attendance would lead to more engagement and more student success. In outcome driven education, funding has often been tied to performance and it will be vital for CAA to ensure continued student success.

The original *business problem* is;

"How could CAA improve student retention and student success?"

1.2.1 Literature review summary

In Chapter 2, a literature review has been performed to examine issues around the business problem. The first phase of the literature review has revealed that *increasing student engagement* may be a potential solution to improving student retention and student success (Ito et al., 2010; Moon, 1999, 2013; Ruhe, 1998; Ruhe & Zumbo, 2009).

The revised *business problem* has become;

- *How can CAA boost student engagement to improve student retention and student success?*

Methods of boosting student engagement have been explored in the literature review. Creative teaching has been identified as an enabler of student engagement, and new technology has been identified as an enabler of creative teaching by Ferrari, Cachia and Punie (2009).

The introduction of new teaching technology through an eLearning innovation could boost student engagement, directly improving student retention as a result. A higher level of student success would result in positive feedback on the market, and may therefore increase the number and quality of enrolments.

Key points;

- *Increased student engagement* will result in increased student retention and student success (Ferrari, et al., 2009).
- *Creative teaching* is a key activity to boost student engagement.
- The introduction of *new technology* in the classroom can be a *key enabler of creative teaching* and a catalyst for increased engagement (Ferrari, et al., 2009).
- The introduction of new technology is regarded as a *radical innovation* in the way teaching and learning is organised by researchers (Chou & Chou, 2011).
- *Combining online learning with face-to-face learning* as “blended learning” results in a dramatic increase in student retention and student success (Chou & Chou, 2011; Moran, 2011).
- *Blended learning* is considered *value-adding* to the existing product, rather than a new product line (Chou & Chou, 2011). Therefore the innovation proposed is a *process innovation*, rather than a *product innovation*.

1.2.2 Research methodology

In Chapter 3, the methodology used by the researcher has been examined in detail.

Staff and students have not been using eLearning, so outputs from eLearning usage cannot be measured. Rather than a quantitative approach, this research has employed a qualitative methodology, using a series of focus groups and interviews to assess attitudes towards eLearning and digital literacy.

Emotional responses often resist a quantifiable approach, but qualitative research can generate a deeper understanding of consumer viewpoints (Stamm, 2008). Qualitative research has allowed the researcher to probe for richer, in-depth explanations.

The *hypothesis* drawn from the literature review is;

H1: The use of blended learning and digital literacy tools via a learning management system, (LMS) may boost student engagement, thereby improving CAA's business goals of student retention and student success.

Key areas of interest are internet access, use of a Learning Management System, (LMS) and social media.

The main *research question* is,

Will the introduction of blended learning and digital literacy tools improve student engagement, resulting in higher levels of student retention and student success at CAA?

Before implementing an eLearning innovation, it is important to conduct research to assess whether the introduction of eLearning and digital literacy tools will be accepted and adopted by key end users; teachers and learners.

Three research objectives were considered in the literature review;

- *To determine how the adoption of digital literacy tools and online learning may enhance the learning environment and make it conducive to student success.*
- *To determine what role online learning and ICT may play in a training environment which relies on competency based training (CBT) methods.*
- *To determine if and why the use of digital literacy tools may attract a higher standard of learner to the institution.*

From the literature review findings, the research objectives have been focussed into 6 important research questions;

- *Would eLearning improve CAA's business goals of increased student retention and student success?*
- *Would use of an LMS and the internet improve student engagement at CAA?*
- *Would use of an LMS and the internet improve the teaching/learning experience for tutors?*
- *Would staff require extra training to use the internet and an LMS effectively?*
- *Will there be more student success if CAA provides training in digital literacy tools?*
- *Should Facebook play a role in the education program at CAA?*

Through a series of qualitative interviews, the research questions have been examined using a triangulation of views from students, teachers, industry representatives and academic advisors with extensive experience in eLearning.

1.2.3 Interviews

Chapter 4 has described the results of the interviews and has reported significant findings.

Qualitative research was conducted with 3 focus groups;

- Unitec post-graduate students (5)
- CAA management (4)
- CAA staff (8)

12 in depth interviews were conducted, involving;

- Tutors at CAA (4)
- Students who have completed their course at CAA (2)
- eLearning academic experts from Unitec (3)
- Unitec Student Representative, (USU) with experience in student communications (1)
- Business owner (1)
- Industry representative, New Zealand Association Registered Hairdressers (NZARH) (1)

1.2.4 Findings

In Chapter 5, interview findings have been analysed using comparative techniques to highlight significant points within the research.

The findings have indicated that the majority of participants strongly agreed with research questions 1, 2, 3, 4 and 5;

1. eLearning would improve student enrolments and student retention
2. Use of an LMS and the internet would improve student engagement
3. Use of an LMS and the internet would improve the teaching/learning experience for tutors
4. Staff would require extra training to use the internet and an LMS effectively
5. Digital literacy training would benefit students and contribute to their effective success in the community.

The majority of stakeholders disagreed with research question 6; neither teachers nor students want to see Facebook exploited for education purposes.

The majority of stakeholder groups including tutors, students and industry were in favour of the proposed eLearning innovation and believed it would contribute to increased student engagement, retention and success. However, findings have indicated that the views of CAA management contrasted sharply with other stakeholders, for reasons which have been examined in greater depth during the summary of findings in Chapter 6.

1.2.5 Recommendations

Chapter 6 has presented conclusions from the analysis of the findings. The researcher has proposed recommendations to CAA, including important advice from eLearning experts for launching an eLearning innovation;

- Train the staff
- Ask the students
- Don't buy anything
- Stay flexible

Acceptance of the innovation by staff and students will be pivotal to success. Obtaining buy-in from staff will be essential as resistance to change could derail the project. Chapter 6 has presented advice for managing resistance to change, such as developing

organisational capabilities around ICT, developing staff confidence through work groups and identifying volunteer change agents.

The findings have indicated it is important to implement pilot studies to test the viability of eLearning models and introduce the organisation to innovation. Excitement must be generated from the product launch first, and then buy-in must be sustained through on-going learning. Developing an *organisational learning, (OL)* culture will be critical.

A Moodle pilot site has been created to demonstrate the affordances of an LMS to staff and stimulate discussion (Gibson, 1977).

Innovation theory has been utilised to design a stage gate process for CAA. Stage Gate 1 has proposed; *“Will an eLearning innovation improve teaching and learning at CAA?”* Analysis of the findings shows respondents have agreed that the introduction of eLearning will boost student engagement, thereby resulting in deeper learning and more highly skilled students entering industry.

The researcher has proposed that CAA moves on to Stage Gate 2; designing an ICT strategy which will support the eLearning innovation. To assist planners in this process, the researcher has investigated three ICT strategies and the costs/benefits of each. Analysis has concluded with describing the ICT strategy which will add the most value for the investment required.

Recommendations follow for;

- Stage Gate 3; training staff
- Stage Gate 4; digitising resources
- Stage Gate 5; record keeping for stakeholders

1.2.6 Conclusions

Chapter 7 has presented conclusions from this research. It is important for management to achieve alignment with the needs and expectations of stakeholders, both internal and external. The findings of this research have indicated stakeholder groups expect improvements to be made in classroom ICT and technology, or learners will become disengaged in the classroom, and teachers will become more frustrated. The lack of the internet is a particular lightning rod for frustration.

CAA has transitioned to new management since the collection of research, and an opportunity exists for new managers to reimagine the approach to classroom ICT at CAA.

Initiating an eLearning program will be vital for CAA to remain relevant in the tertiary environment of the future. An eLearning innovation would add value, efficiencies and uniqueness to CAA's teaching culture.

1.3 Business theory; disciplines and approaches

An eLearning innovation would stimulate change in organisational learning around curriculum design and pedagogy, or "*how we teach*" at CAA. While an education theory paradigm is important and has its place, as a PTE it is important for CAA to focus on core business goals. Therefore, for this thesis the researcher has adopted a *business theory approach*.

Central to this research is the understanding that eLearning is not pedagogy; it is a process innovation which is designed to add value for existing customers. Education designers at CAA will be able to adapt pedagogical thinking to suit the new medium of content delivery. While ICT can be a facilitator of pedagogical change, this research deals with the business motives for investing in an ICT infrastructure to support eLearning and the following OD implications. Considerable investment is required, so management in the future will want to see return on investment, (ROI) through increased efficiency and outputs.

1.3.1 Organisational change theory

Organizational development, (OD) theory has been utilised to identify areas where CAA could drive change to improve on core business goals of student enrolments, student retention and student success. OD theory has been applied to issues of leadership, strategy, group dynamics and organization design. Discussing technological innovation alone would not take into account the personal and social characteristics of the organization (Kotter, 2012). Elements of *change theory* in a business paradigm have been central to this paper. An innovation launch would require a careful process of engaging buy-in, first from management, and then the entire organisation. Therefore, this thesis has focussed on assessing staff willingness to embrace change.

Figure 1 depicts the 8 step process for change by Kotter, (2007), where creating a coalition of support, communicating a vision and embedding the change in company culture is as vital as the innovation itself.

Figure 1: The 8-step process for leading change.



*The 8-Step Process for Leading Change – Dr. John Kotter

Source: Adapted from Kotter, (2007)

This thesis has explored issues of *strategic change*, involving the improvement of alignment between the organization's environment, strategy and organization design, which has made it an issue of OD theory (Kotter, 2012). In the interests of *strategic alignment*, an ideal outcome would be for business goals and education goals to ultimately align. Reorganising the teaching paradigm at CAA and the approach to staff training would be a radical transformation, so *organizational transformation (OT)* theory may apply (Chou & Chou, 2011).

1.3.2 Human resources management (HRM)

The introduction of ICT and development of the competencies required to use it will require managing staff training in new ways, making it a *human resource management, (HRM)* issue. Also, CAA delivers training in practical skills for a commercial environment, making the professional development of learners a *human resources, (HR)* issue.

HR impacts are important when implementing a large ICT innovation and it is important to consult staff about their teaching/learning needs. A *behavioural science* approach to change acknowledges the influence individuals have over the outcome (Kotter, 2012). Therefore, assessing staff acceptance of the change has been the dominant direction of this research.

It is also important to make it a customer-driven change and ask end users how they will respond to ICT (Osterwalder & Pigneur, 2010). Therefore, the research has focussed on asking learners what their expectations are from their education.

1.3.3 Innovation theory

An eLearning strategy would be a radical innovation for CAA, so *innovation theory* has been considered (Chou & Chou, 2011). The merits of a design approach have been evaluated, along with a recommendation for a *stage gate process*. Once research has been completed, any decision to move forward with the ICT innovation would be Stage Gate One (Stamm, 2008). Following stage gates have been described so that CAA may approach the innovation as a design-focused organization.

There is a trend in contemporary *action research* to increase the involvement of organization members in learning how to change the organization, referred to as *participatory action research*, action learning or *self-design*. The best outcome of OD would be for CAA to become a *self-designing organization* with organization members empowered to continually improve the organization (Kotter, 2012). This thesis has begun that process by initiating inquiry, the first stage of *appreciative inquiry, (AI)* (Kotter, 2012).

1.4 Chapter summary

In Chapter One, an overview of the background to the project has been provided, along with an outline of the purpose of each chapter in the thesis, including findings, recommendations and final conclusions.

The predominant business theory which guides the development of the research throughout the thesis has been described; in particular the importance of change theory; the issue of achieving strategic alignment with the external operating environment, and the HR impacts of training for an eLearning innovation.

Chapter Two describes the findings of the literature review which has been performed, guided by the three research objectives.

2.0 CHAPTER TWO – LITERATURE REVIEW

In Chapter One, an overview of the research project has been provided.

Chapter Two describes the literature review which has been performed to establish knowledge around the three research questions;

- *To determine how the adoption of digital literacy tools and online learning may enhance the learning environment and make it conducive to student success.*
- *To determine what role online learning and ICT may play in a training environment which relies on competency based training (CBT) methods.*
- *To determine if and why the use of digital literacy tools may attract a higher standard of learner to the institution.*

The literature review analysis has focussed on three key phases;

- Student engagement and retention
- Technology in education
- CAA's business objectives

2.1 Phase one; student engagement and retention

Researchers have generally agreed that increasing student engagement is a method for increasing student retention (Davidson & Amenkhienan, 2011; Molinari & Huonker, 2010; Tinto, 1987). While there has been persistent debate about what constitutes evidence of effective learning, it has been generally agreed that student engagement is a valid predictor of student success (Dickie, Kayani, & Dickie, 2010; Molinari & Huonker, 2010).

How engagement influences retention has been examined in this section.

2.1.1 Student engagement

While researchers have overlapping definitions and complex measures of student engagement, it has been generally agreed that to achieve engagement, pedagogy must motivate students to become active learners, rather than passive receivers of information (Dickie, et al., 2010). A kind of *deep learning* comes from the full engagement of learners'

minds and emotions, known as “meaning orientation” (Koszalka, Song, & Grabowski, 2001; McWilliam, 2007; Ruhe, 1998). When researchers have described reflective learning, deep learning and student engagement, they have often been describing the same phenomenon (McWilliam, 2007).

Student engagement has often been identified by observation of; *intrinsic motivation*, or studying for the satisfaction derived from learning; positive affect; persistence; effort and increased self-confidence (Du Plessis, Frederick, & Maritz, 2013; Ruhe, 1998, 2002). This intrinsic motivation, evidenced by extra effort and persistence, is a sure indication that student engagement has occurred.

2.1.2 Creative teaching

Researchers have consistently described student engagement indicators as; intrinsic motivation; extra effort; collaborative learning and deep learning (Du Plessis, et al., 2013; Lerer & Talley, 2010; Moon, 1999; Ruhe, 1998). It has been widely recognised that creative teaching can act as a trigger for the above four processes (Ferrari, et al., 2009).

Important *enablers of creative teaching* have been defined as; *multiple assessment tools; cultural awareness; curriculum; individual skills; teaching format, and technology*, such as on-line work or social network sites (Ferrari, et al., 2009). These enablers are triggers for indicators of student engagement, particularly intrinsic motivation and deep learning (Ferrari, et al., 2009).

Creative teaching has been a known stimulant for student engagement, and *relational teaching*, or the ability of educators to develop a connection with students has been a powerful enabler of creative teaching (Demetriou, Wilson, & Winterbottom, 2009). Relational teachers have used humour and *emotional intelligence*, (EI) to alter teaching practices and vary their strategies in response to learners (Demetriou, et al., 2009). The education field has recognised how EI can increase student engagement, with some researchers concluding that EI is crucial to the success of learners (Goleman, 1998).

2.2 Phase two; technology in education

Phase one of the literature review has revealed key *indicators* of student engagement as;

- *Intrinsic motivation*; (satisfaction derived from new knowledge)
- *Extra effort*; (working outside course hours)
- *Collaboration*; (teamwork, communication with peers)
- *Deep learning*; (extra study, pursuit of knowledge)

These indicators are stimulated by *enablers* of creative teaching;

- *Collaborative learning*; (group work, case studies, online interaction)
- *Relational teaching*; (EI, student-centric, cultural awareness)
- *Flexibility*; (multiple assessment tools, adapts to learner's needs)
- *Class interaction*; (online learning, social networking)
- *Technology*; (online learning, blended learning)

The use of modern technology in the classroom has been identified as an enabler of creative teaching (Ferrari, et al., 2009).

Technology has been identified as an enabler of creative teaching, and creative teaching is known to boost student engagement (Ferrari, et al., 2009). The lack of modern technology in CAA's task environment represents a lost opportunity for boosting student engagement ("Becta shows benefits of Web 2.0 in the classroom," 2008; "Content, tools seen migrating to mobile devices," 2011).

2.2.1 Digital literacy

Much emphasis in education has been focussed on literacy skills ("Adult literacy will help cut work accidents," 2012; "Illiteracy a yearly \$3b cost - report," 2012).

However, the adoption of digital devices by young learners has resulted in their increased attempts to negotiate a new understanding of literacy which will include competencies in the digital realm (Ito, et al., 2010; Tierney, Bond, & Bresler, 2006).

Digital literacy has been based on three concepts;

- Skills and knowledge to use digital media software applications and hardware devices
- Capability to understand critically the content of digital media

- Knowledge to use digital technology creatively to produce work (Nelson, Courier, & Joseph, 2011).

The term “digital literacy tools” has included;

- The use of computers and personal electronic devices, along with the training required to master activities
- Use of digital software for a wide range of life assisting functions
- Navigating toolbars, shortcuts and menus
- Communication on mobile phone devices
- The use of social media
- Blogging
- Manipulation of images or video to create a digital storyboard (Tierney, et al., 2006)

The use of these skills has become as much a first language to digital natives as the use of the Oxford dictionary has been to baby boomers (Ito, et al., 2010). Investment in developing digital literacy has become a growing concern in education (Barton, 2011; "Inquiry to look at digital learning in schools," 2012). Experience with computers has resulted in increased levels of digital literacy, regardless of age or background (Eshet-Alkalai & Chajut, 2009).

2.2.2 eLearning

eLearning has been defined by Wheeler et al (2003) as the delivery of content to individuals and groups via the Internet. Brown, Murphy and Wade (2006) define eLearning as any learning activity supported by ICT, and found while 67% of organisations were already using eLearning in 2006, 90% of those organisations would invest further in eLearning. Figure 2 illustrates the perceived benefits of eLearning for respondents of that survey (Brown, et al., 2006).

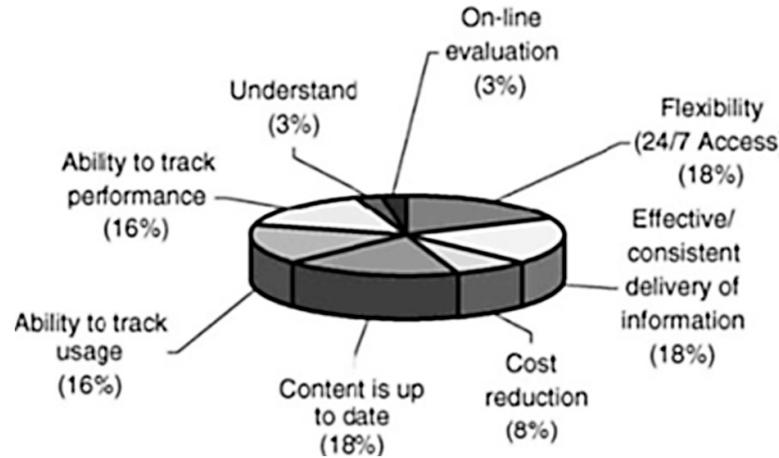
Numerous other studies have focussed on the benefits of eLearning (Davis & Wong, 2007; Wheeler, et al., 2003).

Wheeler et al (2003) list the most frequently used models as;

- On-line supplement to a face-to-face course
- On-line self-paced courses; (similar to correspondence courses)
- On-line lectures; (video and audio over the Internet)

- Guided collaboration; (students learn through collaboration)
- Digital game-based learning and simulations

Figure 2: Benefits of eLearning.



Source: Brown et al, (2006:420).

Use of a *learning management system*, (*LMS*) to supplement the classroom experience has become common (Kaliski, Booker, & Schumann, 2012). The use of an LMS has allowed providers to measure extensive analytics on student behavior, such as; when students access materials; how long students take to complete assignments; productivity in discussion forums and how often students log in (Kaliski, et al., 2012; Weiss, 2011).

2.2.3 Online learning

Online assessment can help develop meta-cognitive skills, creativity, communication skills and teamwork in learners (Ridgway, McCusker, & Pead, 2006). However, the social dimension of relational teaching is also important in online learning, and the tutor must engage with the online learner in a social dynamic as well as instructional (Ferrari, et al., 2009; Soccio, 2012). For interactions with students online to be successful, a shift towards creative teaching in the redesign of content will be required (Chou & Chou, 2011).

Online interaction has stimulated intrinsic motivation because it takes the learner out of the classroom and brings education into their own private space (Chou & Chou, 2011). Motivated learners will pursue study outside course hours, resulting in extra effort and

increased intrinsic motivation (Lerer & Talley, 2010). Engagement can be boosted online by linking online learning to real-world goals, which stimulates deep learning (DeLotell, Millam, & Reinhardt, 2010). Peers also play a huge role online, as learners may be interacting with thousands of people (Ito, et al., 2010).

Sargent, Borthick, & Lederberg (2011) have found that the use of online tutorials has resulted in higher retention and more student success. Using learning content online has encouraged students to put in extra effort in their own time (Martin, 2012; Shroff, Vogel, Coombes, & Lee, 2007). Collaborative learning can be augmented by online learning, as evidenced by the popularity of social networking sites such as Facebook and LMS (Chou & Chou, 2011; Ferrari, et al., 2009).

While online learning has been evaluated from the perspective of student outcomes, attitudes and satisfaction, researchers are still debating whether it contributes to gains in student engagement (Robinson & Hullinger, 2008). Intrinsic motivation has become more important in an online setting as there is no supervisor to set the pace (Shroff, et al., 2007). Some researchers have been critical of online learning's lack of social contact and failure to inspire deep learning (Chou & Chou, 2011). Students must put in the effort to engage in an online environment, so the tutor must design the course in a way which stimulates participation (Robinson & Hullinger, 2008).

2.2.4 Blended learning

Chou and Chou (2011) have described drawbacks which can make online learning less effective than traditional face-to-face, such as; failure to achieve deep learning; lack of peer contact; high initial costs for preparing multimedia and content; costs for system maintenance and the need for flexible tutorial support. Studies have shown for face-to-face teaching, students have rated instructor, course quality, course interaction, structure, and support higher than for online courses. However, the same studies revealed no significant difference in student outcomes between the two approaches (Chou & Chou, 2011). Similarly, Moran (2011) asserts that previous research has indicated outcomes achieved during online training are similar to outcomes achieved during face-to-face training.

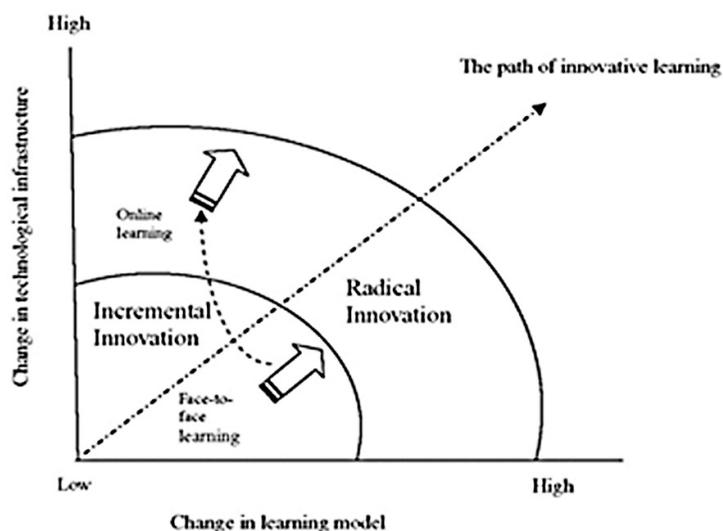
However, it is when both mediums are used together in a form of blended learning that significant improvement has been seen in learner achievement (Chou & Chou, 2011). Brown et al. (2006) have described how all survey participants agreed that eLearning is

more effective when combined with traditional forms of learning in a 'blended learning' solution.

Traditional lines between distance education, (DE) and face-to-face teaching have blurred as blended learning has generated a transformation in the way teaching and learning is conceived (Cherng-Jyh & Abdous, 2011; Chou & Chou, 2011). Chou and Chou's model has described blended learning as a radical innovation and recommends a change in the learning paradigm.

Figure 3: Innovative learning map.

Innovative learning map: from face-to-face learning to online learning.



Source: Chou & Chou (2011:469).

Figure 3 has indicated that a dramatic increase in ICT technology could result in radical change in the teaching/learning model at CAA rather than incremental (Chou & Chou, 2011). A case could be made that an ICT innovation at CAA may be regarded as an organisational transformation, (OT). The use of blended learning and digital literacy tools at CAA could require radical change in the way tutors teach and work together (Robinson & Hullinger, 2008). Creating a coalition of support, communicating a vision and embedding the change in company culture is vital (Kotter & Schlesinger, 2008).

2.3 Phase three; business objectives

In phase two of the literature review, digital literacy has been defined as;

- Skills and knowledge of digital media software and hardware
- Critical understanding of digital content
- Creative use of digital technology for work (Nelson, et al., 2011).

Key findings have been as follows;

- eLearning has been defined as the use of any digital media or online work, including an LMS.
- Online learning has been criticized for failing to secure engagement.
- Combining face-to-face teaching and online teaching as “blended learning” has resulted in higher engagement and student success than traditional face-to-face teaching (Chou & Chou, 2011; Moran, 2011).

As a training provider, CAA has been required to assess students according to functional competencies determined by HITO and NZQA.

Therefore, could an online learning program and training in digital literacy tools align with CAA’s training objectives, when neither is required by NZQA? This positioning question has been examined in phase three.

2.3.1 Competency based training

Assessment processes have shaped what is taught in education (Ridgway, et al., 2006). The *competency based training, (CBT)* system adopted by NZQA has been a direct offspring of the UK’s vocational education and training, (VET) model (Foot & Megginson, 1996). “Competency” has been achieved when a learner demonstrates industry specific standards to an assessor who has been expected to remain objective (Foot & Megginson, 1996; Kosbab, 2003). This one-size-fits-all model has inherent flaws and is a reductionist attempt to reduce phenomena to standardised concepts (Collins, 1983; Deist & Winterton, 2005).

In the UK, the CBT system has been condemned by many researchers as failing to promote creativity and lacking work place relevance (Unwin et al., 2008). Trainers create their own standards for assessing work and confusion persists around the meaning of competence (Deist & Winterton, 2005; Unwin, et al., 2008). CBT measurement of task

performance has ignored problem solving skills, creativity and emotional competencies (Deist & Winterton, 2005; Kosbab, 2003).

There has been a high degree of variability in service industries such as hairdressing, which has required skills which are not easily measured in the execution of a standardised haircut (Frei, 2006; Lee et al., 2007). Hairdressing has been emotive, driven by changing fashions, and success has relied on customer satisfaction (Lee et al., 2008; Meyer & Schwager, 2007).

Customers have not always wanted a product or service which is performed in a standardised way, and customer value has been created when variation in outcomes has occurred (Hall & Johnson, 2009; Lee, et al., 2007). While clients have expected stylists to use creativity, standardisation in work assessment has been a stumbling block to creativity (Gurteen, 1998; Hall & Johnson, 2009; Yeadon-Lee, 2010b). Historically in the tertiary sector there has been a resistance to ambiguity, and this has stifled creativity which learners need to succeed (McWilliam, 2007; Moyer, 2007).

In Europe, CBT has been rejected in favor of various multi-dimensional assessment frameworks which include functional, cognitive and behavioural competencies (Deist & Winterton, 2005). Researchers have suggested trainers must develop behavioural and ethical competencies in students, and have argued for the inclusion of 'meta-competencies', such as the ability to cope with uncertainty (Cheetham & Chivers, 1996; Deist & Winterton, 2005).

In France, assessment competencies have included; "savoir" (knowledge); "savoir-faire" (functional competences) and "savoir-être" (behavioural competencies). Vocational training competencies in Germany have included; "personal competence", or the ability to analyze development opportunities in life; "social competence", or the willingness to experience relationships, and meta-competencies such as "learning how to learn" (Deist & Winterton, 2005).

Much of the tacit knowledge of a professional hairstylist has relied on their command of EI. The ability to exhibit empathy and understanding has been crucial to a successful customer service experience (Goleman, 1998; Yeadon-Lee, 2010b). A hairdressing student must comprehend body language or indirect language and soft skills such as EI to achieve a balance between professional distance and friendship (Beetles & Harris, 2010; Meyer & Schwager, 2007; Yeadon-Lee, 2010a, 2010b).

The use of LMS and the internet can transmit additional competencies to learners by bringing the experience of real life scenarios into the class from professionals around the world (Ito, et al., 2010; Ridgway, et al., 2006; Soccio, 2012). Audio-visual media has made it easier to convey complex topics to learners and boost learner engagement (Bell, 2005). Online learning has supported higher order thinking skills such as reflection, or cognitive processes such as 'learning to learn' (Ridgway, et al., 2006). Online learning has enabled the development of additional competencies in learners through the careful development of e-assessment (Ridgway, et al., 2006).

The role played by a successful tertiary institution in a student's life goes beyond the CBT prescription of task performance (Deist & Winterton, 2005). The notion that online learning and digital literacy tools training have no place in CAA's curriculum because they are not required by NZQA should be regarded as unfounded (Ridgway, et al., 2006).

2.3.2 Student retention and recruitment

With government funding tied to successful outcomes, it is essential for CAA to boost attendance. A high completions record would signal to market that CAA has a successful teaching formula, so it is important for the brand to achieve successful outcomes, in order to boost enrolments. Re-enrolments are also a valuable source of revenue.

The literature review has shown that online learning alone will achieve similar results to conventional face-to-face teaching. However, it is when the two are used together that there is a dramatic increase in learner achievement (Chou & Chou, 2011; Moran, 2011). Engagement through online learning has increased student retention and the intrinsic motivation of learners (Ferrari, et al., 2009; Sargent, et al., 2011). The resulting boost in the intrinsic motivation of high achievers would inspire other students, therefore improving student engagement and retention across the entire class (DeLotell, et al., 2010).

Innovation in teaching processes could improve CAA's reputation as an industry leader, which would attract a greater pool of recruits. Students that are familiar with technology would be more likely to choose blended learning options and value-adding options such as internet access (Van der Rhee, Verma, Plaschka, & Kickul, 2007).

2.3.3 Strategic alignment with environment

The environment CAA has operated in is increasingly becoming digital, with businesses shifting to online environments and the use of cloud, email, twitter or social media

(Giamanco & Gregoire, 2012; Weill & Vitale, 2001). The education industry has been transformed by the need to facilitate digital literacy, with schools in the poorest areas of NZ involved in eLearning strategies (Barton, 2011; S. Collins, 2012). A new generation of digital natives are preparing to enter our schools, with toddlers outpacing teachers in digital literacy (Leathley, 2012; Wade, 2012).

CAA graduates have found themselves in a business environment which demands a wide range of digital literacy competencies, such as website usage, databases, email, and online booking to manage customers, or blogs; social media and twitter to market their businesses (Giamanco & Gregoire, 2012).

Contingency theory has provided a compelling argument for CAA to adopt an eLearning strategy, as an organisation must achieve strategic alignment with its environment (Dunphy & Stace, 1988). Lawrence and Lorsch, (as cited in Donaldson, 2001) have suggested company strategies should focus on achieving a fit between the organisational structure and the external environment. An eLearning strategy could allow CAA to achieve a strategic fit with the digital marketplace it operates in as a tertiary provider, and also align with the expectations of learners.

2.3.4 Staff retention

Having access to the internet and the use of an LMS would enable tutors to hold students' attention, eliminating the frustration of dealing with bored students (Ferrari, et al., 2009). eLearning could bring benefits to staff training as well as learners. Brown et al. (2006) have connected effective eLearning to improvements in staff retention, attitudes, company culture and performance. Managing training with new technology would be an HRM issue.

2.3.5 Competitive advantage and barrier to new entrants

Increased specialisation in the delivery of CAA's product could act as a barrier to competitors entering the market (Porter & Kramer, 2006; Soccio, 2012). Use of an LMS would require trained educators who can organize their class material and interact with learners in an online environment.

It would be difficult for new entrants in the industry to acquire a team skilled in eLearning competencies (Soccio, 2012). However, CAA would need to move faster than competitors to alignment with industry and secure competitive advantage (Tikhomirov, Tikhomirova, Maksimova, & Telnov, 2010). Servilles Academy, one of CAA's

competitors, has recently won awards at the New Zealand Association of Private Education Providers, (NZAPEP) for eLearning innovation (see Appendix 8.5).

CAA is subject to external pressure from a wide range of stakeholder organisations, including TEC, NZQA and HITO. As PTEs adopt eLearning more widely, CAA may experience pressure to modernise from stakeholder bodies. HITO has already required CAA to implement online literacy and numeracy testing.

Learning to respond to environmental pressures and cope with technological change would allow CAA to become a learning organization, (LO). CAA could insulate itself from the threat of other innovators by anticipating the market and future proofing, reducing risk for investors and shareholders.

In summary, phase three of the literature review has found;

- CBT fails to address EI competencies which trainees need to succeed in industry (Unwin, et al., 2008).
- There are international precedents for exploring more competencies than task performance (Deist & Winterton, 2005).
- Education providers should offer more value adding options that just assessing competence in task performance.
- CAA could add value to their product by increasing the professional development of students and building their digital literacy skills (Ridgway, et al., 2006).

eLearning contributes to important CAA business goals;

- Student retention and recruitment
- Strategic alignment with environment
- Staff retention
- Competitive advantage
- Barrier to new entrants; future-proofing

An eLearning innovation would align CAA's business strategy with industry, student's needs and the modern business environment, in keeping with contingency theory (Dunphy & Stace, 1990).

2.4 Literature review overview

The three phases of the literature review have been summarised in this section, and conclusions described.

2.4.1 Phase one overview

Phase one of the literature review has examined whether the evidence has shown that improving student engagement could have an impact on CAA's business goals of increasing student retention and student success.

Themes explored;

- Student retention in learning institutions and how it can be improved.
- Student engagement; is there a link to student retention and student success?

The literature review has shown;

- *Increasing student engagement* has a positive impact on student retention and student success (Davidson & Amenkhienan, 2011; Molinari & Huonker, 2010).
- *Creative teaching* is a key to boosting student engagement (Ferrari, et al., 2009).
- *Enablers of creative teaching* are identified as; multiple assessment tools; curriculum; *technology*; individual skills and teaching format (Ferrari, et al., 2009).
- *Technology* is a known enabler of creative teaching and impacts on student engagement (Ferrari, et al., 2009).

2.4.2 Phase two overview

Phase one of the literature review has shown that modern technology can enable creative teaching, boosting student engagement (Ferrari, et al., 2009). This presents an answer to the research objective;

- *To determine how the adoption of digital literacy tools and online learning may enhance the learning environment and make it conducive to student success.*

Phase two of the literature review has continued to explore the above research objective.

Online learning, blended learning and digital literacy tools have been shown to all have an upward effect on student engagement (Chou & Chou, 2011; DeLotell, et al., 2010). Student engagement can be boosted by use of an LMS and training in digital literacy

tools, such as computers, digital devices and software (Iqbal & Qureshi, 2011). Online learning has triggered interest, application and understanding, allowing deep learning to occur for students (DeLotell, et al., 2010). Delivering audio-visual media to the class using a projector and an LMS could relieve boredom and boost engagement (Bell, 2005).

Using digital tools to help students achieve their goals could promote engagement with online activities in their own time, stimulating additional motivation (Martin, 2012; Shroff, et al., 2007). Digital literacy capabilities would need to be embedded in lessons and staff would need training in the “know-how” of digital technology (DeLotell, et al., 2010).

2.4.3 Phase three overview

Phase 3 of the literature review has focussed on research objectives 2 & 3;

- *To determine what role online learning and ICT may play in a training environment which relies on competency based training (CBT) methods.*
- *To determine if and why the use of digital literacy tools may attract a higher standard of learner to the institution.*

eLearning and training in digital literacy tools are not currently required by NZQA. Therefore the positioning question of this phase of the literature review has been, are online learning and digital literacy tools currently outside CAA’s mandate?

To answer this question, the literature review has evaluated inadequacies in the CBT system according to international experience (Deist & Winterton, 2005). The literature review highlighted reasons for PTEs to introduce innovations in teaching which extend beyond the restrictions of CBT assessment, such as developing well-rounded professionals with relevant skills for the marketplace (Ridgway, et al., 2006). Also, online assessment could assist the development of meta-cognitive skills, creativity, communication skills and team work (Ridgway, et al., 2006).

Concerning enrolments, students already familiar with technology are more likely to choose value-adding options such as blended learning and internet access when choosing an education provider (Van der Rhee, et al., 2007).

2.5 Literature review synthesis

The literature review began with the original business problem;

- *How can CAA improve student retention and student success?*

The literature review has shown that researchers generally agree *boosting student engagement is a method of increasing student retention and student success* (Davidson & Amenkhienan, 2011; McWilliam, 2007).

The overall findings of the literature review have been examined and summarised in this section.

2.5.1 Main research question and hypotheses

The literature review has indicated that boosting student engagement could be a solution to CAA's original business problem of, how to improve student retention and student success.

The *revised business problem* has become;

- *How can CAA boost student engagement to improve student retention and student success?*

The literature review has revealed key *indicators of student engagement* as; intrinsic motivation; extra effort; collaborative learning and deep learning (Moon, 1999; Ruhe, 1998). These drivers can be stimulated by *enablers of creative teaching*, such as; collaborative learning; curriculum and teaching format; multiple assessment tools, and *technology* (Ferrari, et al., 2009).

One enabler of creative teaching is the use of modern technology in the classroom (Ferrari, et al., 2009). Therefore, usage of the internet, an LMS and digital literacy tools could solve the business problem; *“how can CAA boost student engagement to improve student retention and student success?”*

The working *hypothesis* has become;

H1: The use of blended learning and digital literacy tools via a learning management system, (LMS) may boost student engagement, thereby improving CAA's business goals of student retention and student success.

Leading on from the hypothesis is the main *research question*;

- *Will the introduction of blended learning and digital literacy tools improve student engagement, resulting in higher levels of student retention and student success at CAA?*

The literature review has explored the hypothesis with three *research objectives*;

- *To determine how the adoption of digital literacy tools and online learning may enhance the learning environment and make it conducive to student success.*
- *To determine what role online learning and ICT may play in a training environment which relies on competency based training (CBT) methods.*
- *To determine if and why the use of digital literacy tools may attract a higher standard of learner to the institution.*

The literature review has explored the role technology plays in boosting student engagement;

- Research has indicated online learning can stimulate higher student retention and student success (Sargent, et al., 2011).

Delivery of content via LMS has revolutionised education and has boosted student engagement (Chou & Chou, 2011; Davis & Wong, 2007; DeLotell, et al., 2010; Ferrari, et al., 2009).

- Online learning alone has yielded similar levels of engagement to classroom teaching (Chou & Chou, 2011; Robinson & Hullinger, 2008).
- Combining online learning with face-to-face teaching as “blended learning” has resulted in a dramatic rise in student engagement (Chou & Chou, 2011; Moran, 2011).
- Digital literacy consists of skills using; hardware; software; understanding digital media critically and using digital technology to produce work creatively (Ito, et al., 2010; Nelson, et al., 2011).

The literature review has examined CAA’s business goals and discussed whether blended learning options or training in digital literacy tools are appropriate innovations when they are currently not required by NZQA. The method of CBT used in the NZQA model has ignored high variability in customer service interactions, promoting a one-size-fits-all model (Frei, 2006). CBT has been found to have inherent flaws and international experience has revealed the widespread acceptance of a more various range of

competencies, including cognitive, behavioural and ethical competencies, as well as 'meta-competencies' (Deist & Winterton, 2005).

A literature review analysis of CAA's business goals has indicated an eLearning innovation could improve; student retention; competitive advantage; insurance against external pressure; barriers to new entrants; staff retention and student recruitment.

For CAA to achieve its business goal of student success, it will be necessary to go beyond the NZQA mandate and offer extra value to learners with a blended learning program and digital literacy tools training.

2.5.2 Conclusion

The literature review has revealed;

- 1. Student engagement will produce greater student retention and student success.*
- 2. Classroom technology can improve student engagement.*
- 3. eLearning will support several critical business objectives for CAA, including student retention and student success.*

A strong case has been established that increasing student engagement will boost student retention and student success (Koszalka, et al., 2001). The literature review has shown that key enablers of creative teaching can boost student engagement (Ferrari, et al., 2009). Technology is one of those key enablers.

Analysis of the literature has indicated there is scope for CAA to expand the teaching curriculum beyond preparation for assessment of functional tasks, and promote the development of social skills, problem solving abilities, communication and creativity (Deist & Winterton, 2005).

CAA's business goal to increase student success could be advanced by promoting the development of more learner competencies than task performance alone. Use of an LMS to bring multimedia into the classroom could allow educators to teach learners digital literacy skills and to demonstrate tacit knowledge around service interactions (Ito, et al., 2010).

An eLearning program using an LMS and internet access could prepare learners for a customer service industry by providing them access to an online, global community of professional experience (Ito, et al., 2010; Ridgway, et al., 2006). Digital literacy tools training could stimulate innovation in tutors and help them to connect with the needs of

digitally native learners, while allowing complex topics to be conveyed more easily (Bell, 2005; Martin, 2012). The use of multimedia in an LMS would capture the attention of visual learners during theory lessons and improve student retention (Leaver, 1997).

For a training academy with the goal of increasing student success, the literature review has indicated that a blended learning and digital literacy tools training would not only be highly beneficial; they are essential.

2.6 Chapter summary

In summary, this literature review in Chapter Two has indicated that boosting student engagement will improve CAA's business goals of student retention and student success. Proven methods of boosting student engagement have been revealed as enablers of creative teaching, and new classroom technology has been identified as an enabler of creative teaching (Ferrari, et al., 2009).

The literature review findings have shown that despite its drawbacks, such as the lack of social contact, online learning can boost intrinsic motivation for students who are highly disciplined or motivated (Chou & Chou, 2011).

However, it is when online learning is blended with face-to-face teaching as blended learning, that gains in student engagement are achieved beyond traditional teaching alone (Chou & Chou, 2011).

CAA's business goals are not restricted to the requirements of the CBT assessment system and there is scope for adding value to the product beyond NZQA requirements. However, before initiating an eLearning innovation, market research must be conducted with end users and stakeholders. Chapter Three outlines the research methodology used to conduct the research in this thesis.

3.0 CHAPTER THREE - RESEARCH METHODOLOGY

In Chapter Two, the literature review findings have been described at length as evidence that a blended learning program will contribute to CAA's business goals of increasing student retention and success by boosting student engagement.

However, for decision makers at CAA, a literature review alone may not be enough to justify the expense of an eLearning innovation. More detailed data will be required to assess how end-users may respond to an eLearning innovation, so that allowances can be made for any potential HR impacts in the planning stage.

In Chapter Three, the research project to collect this data has been described fully.

3.1 Research overview

The original *business problem* the literature review has attempted to resolve is;

- *How can CAA boost student engagement to improve student retention and student success?*

The literature review findings have shown that technology can boost student engagement (Ferrari, et al., 2009; Molinari & Huonker, 2010; Sargent, et al., 2011). The gap in current research this study sets out to examine is the impact that blended learning and digital literacy tools training could have on hairdressing trainees in a work based training academy. The approaches and research methodology has been described in detail in this section.

Innovation theory has been crucial and OD theory has been used to evaluate the potential for resistance to change. HR impacts have been considered in the training requirements of staff for an eLearning innovation. The literature review has not identified any studies to date involving an eLearning innovation in a hairdressing academy setting.

3.1.1 Research question and aim

Analysis of the literature review has indicated that technology may be a potential solution to the original business problem.

The main *research question* has been;

- *Will the introduction of blended learning and digital literacy tools improve student engagement, resulting in higher levels of student retention and student success at CAA?*

Therefore, the *research aim* has been;

- *To establish whether or not the adoption of blended learning and digital literacy tools may increase student engagement in a trade-based training environment, to improve student retention and student success.*

3.1.2 Research objectives and hypothesis

The literature review has provided clarity and focus around the *research objectives*;

- *To determine how the adoption of online learning and digital literacy tools will improve the learning experience at CAA and promote student success.*
- *To determine what role online learning and ICT may play in an assessment environment based on competency based training (CBT).*
- *To determine if and why the use of digital literacy tools may attract more enrolments to CAA and a higher standard of learner.*

To test these objectives further, *research questions* have been developed;

- *Would eLearning improve CAA's business goals of increased student retention and student success?*
- *Would use of an LMS and the internet improve student engagement at CAA?*
- *Would use of an LMS and the internet improve the teaching/learning experience for tutors?*
- *Would staff require extra training to use the internet and an LMS effectively?*
- *Will there be more student success if CAA provides training in digital literacy tools?*
- *Should Facebook play a role in the education program at CAA?*

The research has explored a working hypothesis;

H1: The use of blended learning and digital literacy tools via a learning management system, (LMS) may boost student engagement, thereby improving CAA's business goals of student retention and student success.

3.1.3 Interviews

Qualitative research has been conducted using 3 focus groups to test the working hypothesis, and to focus the interview guides for the subsequent individual interviews;

- *Unitec post-graduate students with online learning experience*
- *CAA staff*
- *CAA management*

A total of 12 in-depth interviews have provided rich data for qualitative research, including participants from a wide range of stakeholder groups;

- *CAA staff*
- *CAA students*
- *Industry representatives, including a business owner, an elected student representative, and a representative from NZARH.*
- *Academic advisory staff experienced in eLearning*

3.2 Methodology

The *purpose* of the study has been;

- *To establish whether or not the adoption of blended learning and digital literacy tools may increase student engagement in a trade-based training environment, to improve student retention and student success.*

This section describes how that research purpose has been achieved in this study.

3.2.1 Purpose and benefits

The purpose of this research has been to assess the potential impact of an eLearning innovation on key CAA business goals of student retention and student success. Interviews have been conducted to establish whether end users of the technology will be receptive to the innovation. The interview findings may inform management's decision whether to proceed with the first pilot study.

This study should add to a wider academic discussion on the importance of online learning and blended learning to student engagement, particularly regarding training for an applied trade.

ICT has represented a potentially disruptive innovation, and aspects of the innovation launch must address HRM impacts, such as resistance to change, managing change and the education of staff. Understanding these impacts should inform the design of an eLearning innovation and ICT strategy at CAA.

Wider social benefits may result, such as young learners contributing more value to the economy and community if they are equipped with skills to utilise life-enhancing technologies such as the internet and social networking.

3.2.2 Quantitative and qualitative methodology analysis

Quantitative research;

- Quantitative methods involve collecting data which can be quantified and analysed using statistical methods (Collis & Hussey, 2013).

Staff and students at CAA have not been using ICT technology. There have been no outputs of online learning or digital literacy tools to measure, so *quantitative* research would not be useful in this case study.

In a quantitative survey, respondents tick boxes with little information available to the researcher why that choice was made, and respondents often do not consider their answers carefully when faced with ambiguity (Collis & Hussey, 2013). Responses may vary according to the respondent's mood and time pressure (Collis & Hussey, 2013). Therefore, while quantitative research is often trusted as more "scientific", the data may be an inaccurate snapshot of underlying beliefs and motivations. Also, this literature review has indicated that diagnosis of effective student engagement will often resist a quantitative approach (Molinari & Huonker, 2010).

Qualitative;

- A qualitative study involves collecting and analysing qualitative data using interpretative methods (Collis & Hussey, 2013).

It is important to explore the existing attitudes of staff and students to an eLearning innovation in order to assess potential HRM impacts, such as resistance to change. Only *qualitative* research can probe deep enough to reveal the current attitudes of tutors, students, management and additional CAA stakeholders towards technology.

Research has been conducted with the potential end users of an eLearning innovation in order to assess their willingness to embrace an eLearning strategy. To support the

innovation, it will be necessary to get to the core of attitudes around technology, and qualitative research can generate a deeper understanding of consumer viewpoints (Stamm, 2008). Therefore, in keeping with the *phenomenological* approach, a *qualitative* approach is the most suitable for this study.

Qualitative research has been used to examine perceptions of the importance of eLearning in trade-based training at a PTE offering NZQA accredited courses in hairdressing, beauty therapy, make-up and SFX. CAA has been used as a case study. The research may inform CAA management decisions regarding the benefits of ICT investment.

This survey has required more detailed information than that which can be obtained from a quantitative survey, and has required the presence of an interviewer to guide questions. Interviews and focus groups yield more data than quantitative surveys, and this can require more time to analyse, making qualitative study more expensive to conduct. Therefore, a fewer number of respondents have been used than in quantitative research (Collis & Hussey, 2013).

3.2.3 Sample size and data collection

Data has been collected from 3 focus groups and 12 interview participants.

Focus groups described in Table 1 have provided an additional depth to understanding of eLearning innovation design.

Name	No.	Sample group	Purpose
FG1UPGS	5	Unitec Post-Graduate students	To establish what engages learners during tertiary study and investigate whether online learning emerges as an influence on student engagement.
FG2CAAM	5	CAA management	To explore perceptions of eLearning and gain a picture of CAA's current approach to ICT.
FG3CAAT	5	CAA tutors	To explore perceptions of eLearning and the viability of working with LMS.

Source: Developed by researcher.

A total of 12 interview participants, described in Table 2 have been selected from a range of stakeholder groups.

Name	No.	Sample group	Purpose
CAAT1 CAAT2 CAAT3 CAAT4	4	CAA tutors	To provide viewpoint on what is lacking in the existing program and explore attitudes around technology in learning.
CAAS1 CAAS2	2	CAA students; graduates	To describe the student experience and explore perceptions around technology in learning.
EAA1 EAA2 EAA3	3	eLearning academic advisors; Unitec	For advice on the pros and cons of an eLearning program and to discover how Unitec embeds eLearning in curriculum.
IR1SO	1	Industry Representative Salon owner	To discuss views on the role technology plays in training and digital literacy requirements of employees.
IR2HAR	1	Industry representative hairdressing association representative; (NZARH)	To find out how technology is most widely used in businesses in the industry.
IR3USR	1	Unitec student representative; (USU) student communications	To describe needs of students in tertiary education and explore how students at Unitec communicate online.

Source: Developed by researcher.

3.2.4 Recruitment of participants

This research has focused on tertiary education, specifically in hairdressing PTEs, to explore the impact of an eLearning strategy on applied trades training. Due to this focussed objective, a case study is the best approach.

CAA has been used as the case study organisation. Convenience sampling has been used for tutors, who were selected for interviews based on willingness and availability. Convenience sampling has been used for graduate students, who were selected according to willingness and availability.

CAA has no existing online learning program, so benchmarking has been performed by involving participants from another tertiary institution which has an eLearning programme. Unitec has been selected to provide insights into online learning. Unitec

students have been selected for a focus group from a discipline which will correlate with the business theme of this research. Therefore, students from the Department of Management and Marketing, (DoMM) at Unitec have been selected. Post-graduate students have been selected for their depth of experience in tertiary education. Convenience sampling has been employed in that participants have completed their studies at Unitec, but contact information has been made available; willingness and availability have been factors in the selection.

eLearning academic advisors from Unitec have been selected for interviews based on their experience in training lecturers for eLearning and the knowledge they have derived from their research in online learning and LMS usage. This level of specialisation makes the pool of potential participants small. Therefore, candidates have participated based on availability and willingness.

Inquiries at the Unitec Student Union, (USU) have established which student representative has had the greatest depth of experience in student online communications. Education is CAA's industry, so therefore the USU representative has been described as an "industry representative".

The New Zealand Association of Registered Hairdressers, (NZARH) has been contacted to identify an available industry representative.

A salon owner known to the researcher for their contribution to the industry has been contacted directly as an industry representative.

No koha, expenses or inducements have been used.

3.2.5 Outcomes

The primary outcome of the research has been to inform an innovation strategy in a PTE providing trade-based NZQA accredited training. The findings from this dissertation could assist CAA management in decision-making about ICT strategies. The findings may provide a basis for on-going action research in the organisation, utilising pilot studies which stem from the innovation launch.

An important outcome is expected to be the contribution to HRM research in the emerging area of online learning. The literature review has identified no studies which have analysed the impact of online learning on student engagement in a hairdressing academy.

While results of the study may be used in presentations and publications, there are no current plans to do so. The study will be posted in the Unitec database, and a hard cover copy will be available to students in the Unitec library.

3.3 Data analysis

Qualitative research methods have been used in this study. Non-quantifying methods have been used to analyse data, utilising an interpretative paradigm.

3.3.1 Analysis methodology

Qualitative analysis has involved;

- *Data reduction*; to focus and reorganise the data so final conclusions can be drawn. Rough field notes have been converted into a written record which supervisors can read and easily interpret.
- *Reflection*; a key part of the process of synthesising the data; drawing together themes and concepts from the research. Consistent themes have been explored and broken down into basic elements. Data has been contextualised through the process of generalisation.
- *Theorising*; used to highlight links or patterns in the data. Rather than simply reporting what has been recorded, lateral thinking has been used to examine and compare the discussions with secondary data to arrive at common connections. In this way, beliefs and values in the data have been linked with theory so recommendations can be made (Collis & Hussey, 2013).

Positivists have often preferred to convert qualitative data into numerical values and perform statistical analysis (Collis & Hussey, 2013). However, this case study has been aimed at unearthing the underlying attitudes which may assist or hinder an eLearning innovation in the case study organisation. Quantitative interpretation of data in this case study would only be the measurement of opinion. There is little to be gained from quantifying opinion, when the opinion itself is the substance of interest to planners. The depth of emotional responses could be lost during the quantifying of data.

For this reason, *qualitative* analysis has been used, with a reliance on data reduction into table form for reflection by the analyst, and the synthesis of findings from a variety of interview subjects.

Focus Groups listed in Table 1 have been conducted with an interview guide designed to draw out the stakeholder group's unique perspective on student engagement. Focus Groups have been recorded and the researcher has listened to recordings while taking notes. The notes have been analysed by scanning for themes and consistent viewpoints.

Reflection upon the focus group findings has shaped the interview guides for individual interviews. Individual interviews listed in Table 2 have been conducted using an interview guide and have been recorded. The recording has been used for note taking.

3.3.2 Findings and final analysis

Analysis of the interview findings has focused on the research questions;

- *Would eLearning improve student enrolments and student retention?*
- *Would use of an LMS and the internet improve student engagement at CAA?*
- *Would use of an LMS and the internet improve the teaching/learning experience for tutors?*
- *Would staff require extra training to use the internet and an LMS effectively?*
- *Would student success improve if students receive training in digital literacy tools?*
- *What is the role of Facebook in education?*

Attitudes towards the six research questions have been reduced to a Likert scale;

- 2; (strongly agree)
- 1; (agree)
- 0; (neutral)
- -1; (disagree)
- -2; (strongly disagree)

Some participants had no viewpoint to offer on certain questions; where no opinion has been ventured, the value '0' has been marked; this represents an absence of opinion, rather than the conflict of views suggested in, "I don't know". The Likert scale has been used to produce visual representations of findings in Chapter 5.

The interview recordings have been listened to and reflected upon. Interview responses have been entered into a 150 page A3 table, sorting data into categories relevant to the six research questions. This table has been used for further reflection to isolate common themes.

From this table, data has been reduced to a 50 page A4 table containing the most significant findings. Correlations and shared viewpoints have been exposed by distilling information down to key points and comparisons. After reflection on this table, more notes have been taken to inform the discussion in the body of text. Finally, this table has been reduced to key points for inclusion in tables 4, 5, 6 and 7 within the body of the thesis to summarise the participants' views.

The final analysis has been gleaned from an evaluation of the findings.

3.4 Ethical considerations

This researcher has been employed by the case study organisation, so care has been undertaken to avoid any potential conflicts of interest. None of the participants, staff or students, were in a subordinate position to the researcher at the time of interviews. There has been a sufficient cross-section of data from various stakeholder groups to evaluate and compare responses from multiple sources, to ensure minimal distortion of findings by familiarity.

3.4.1 Avoidance of conflict of interest

Relationships between participants and researcher;

CAA management; the researcher had been working for the case study organisation at the time of interviews, so care has been taken around potential censorship of information, conscious or unconscious. However, the research purpose had no relevance to the employee's role in the company and the findings will have no impact on the researcher's employment. There are currently no eLearning initiatives at CAA and there has been no financial benefit to be gained by the researcher if CAA proceeds with an eLearning innovation. The researcher does not represent any organisation which may benefit financially from the recommendations of this study.

CAA tutors; the researcher had been working in the case study organisation at the time of interviews. However, participants have been peers and the interviewer has not been their manager. The interviewer has not examined issues of work performance, so participants have not been concerned about potential exposure of performance inadequacies. There has been no perceived advantage or disadvantage for participants

attending the interview, and therefore there have been no reasons for incomplete or inaccurate responses.

Graduate students; although the interviewer had been a tutor at CAA at the time of the interviews, the participants had completed their studies and received their grades, so there has been no benefit to be derived from participation and the interviewer was not in a position of authority.

eLearning academic advisors; the interviewer had not worked for Unitec at the time of interviews and had no relationship with the participants.

Student representative USU; the interviewer had no relationship with the participant.

Business owner; the business owner has been known to the researcher through industry connections; however, at the time of the interviews, the interviewer had no relationship with the participant.

Industry representative; the interviewer had no relationship with the participant.

Unitec post-graduate students; participants had completed their studies at the time of the interviews and the interviewer had no relationship with the participants. There has been no perceived conflict of interest in their participation and their lecturers have not been named.

3.4.2 Maori participation

Of all research participants selected, no participants have been Maori. Therefore no special provisions have needed to be taken into account. The subject matter has not required special consultation with Maori as there have been no Treaty of Waitangi provisions impacted by this research. It has not been necessary for Maori to be specifically involved during this exploratory stage of the research.

There have been no Maori in the sample of CAA staff. While some CAA students have been Maori, no Maori were present in the sample range of; “recently graduated students who were willing to be contacted for research purposes”. Therefore, there have been no Maori present in the sample range of CAA graduates accessible for interviews. In the sample of Unitec post-graduate business students, there have been no Maori participants. There have been no Maori academic advisory staff at Unitec who specialise in eLearning.

CAA may choose to implement a pilot study for an ICT innovation in the future, and at that stage there could be further ethical issues to consider. Any long range studies or quantitative analysis of online learning and digital literacy tools usage at CAA could require addressing the role of Maori learners in the institution. However, these concerns have been beyond the scope of this study.

3.4.3 Other ethical considerations

Upon permission of the participants, interviews have been recorded. Transcripts from interviews can be forwarded to respective participants upon their request. A copy of the analysis and findings can be made available on request. CAA has provided written consent to conduct research at the organisation. The names of other participants and their companies have been recorded for the researcher and supervisors' usage. However, their identities have remained confidential and anonymous in the written thesis or will remain anonymous in any presentations.

Informed and voluntary consent; respondents in the surveys have been given enough information about the purpose and nature of the research to permit informed consent. The interviewees have been informed that participation is voluntary and they have the right to withdraw their participation at any time. No data gathered has been used without prior permission of respondents. The researcher has provided consent forms to all organisations and the participants who have been involved in this research project. Written approvals from all participants have been obtained before conducting any interviews. CAA has provided a letter of approval to be involved in this research.

Respect for the rights and confidentiality and preservation of anonymity; names of the participants and the organisations have been anonymous in the thesis and will remain so in any possible publications and conference presentations.

Minimization of harm; there has been no harm caused by the researcher's actions or the research process.

Cultural and social sensitivity; there have been no identified issues related to cultural and social sensitivity based on the research purpose. No members of a particular ethnic, societal or cultural group have been the principal participants or a sub-group of the research.

Limitation of deception; this research has not applied any deceptive practices. The purpose has been disclosed to all participants at initial contacts, and participants have been reminded of research aims and usage prior to the interviews.

Respect for intellectual and cultural property ownership; this research has been done with respect for the intellectual and cultural property of companies which agree to take part.

Research costs; all costs incurred have been at the researcher's own expense. All interviews have been conducted in the researcher's own time, rather than company time. Some books required for the research have been purchased online. All time devoted to data collection and analysis has been provided by researcher at no cost.

Data handling; data has been handled with strict confidentiality by the researcher. Information from this research and consent forms have been stored securely in a locked cupboard at the principal supervisor's office and will remain on the Unitec secure network for five years before physical destruction. Access will be restricted to the researcher and supervisors.

Future data use; There are no plans for future use of the data at this point in time. The possibility of presenting research findings at conferences or publishing in industry journals may be considered in the future if appropriate consents are obtained from the case study organisation.

3.5 Outputs

This research has been focussed on how to initiate change within the organisation and guide change towards establishing processes of continuous improvement.

Outputs from this research will;

- *Provide decision makers with information* to evaluate whether to proceed with an eLearning innovation.
- *Support a design process* for establishing the ICT infrastructure to support eLearning.
- Support an *LMS pilot* study.
- Propel *on-going action research* for continual innovation.
- *Identify willing change agents* to champion voluntary work groups.

There is a growing trend to involve organization members in learning how to change the organization, referred to as *participatory action research* or *self-design* (Waddell, Creed, Cummings, & Worley, 2013). The ultimate goal of this research has been for CAA to become a self-designing organization with the capacity to evolve in the spirit of ‘*appreciative inquiry*’, (AI) (Waddell, et al., 2013). This research has begun that process with the first step of AI; initiating inquiry.

3.6 Chapter summary

In Chapter Three, a research overview has been provided, outlining the business problem, research question and purpose. Six research questions have been formed and a hypothesis has been established. *H1; “The use of blended learning and digital literacy tools via a learning management system, (LMS) may boost student engagement, thereby improving CAA’s business goals of student retention and student success.”*

Due to the impact of human behaviour on the success of the innovation launch, a phenomenological approach has been used. The various benefits and disadvantages of qualitative research and quantitative research have been evaluated. Chapter Three has described the methodology behind qualitative research involving 3 focus groups and 12 interviews with various stakeholder groups.

Sample size and data collection have been discussed. The analysis of data has been discussed, using data reduction, reflection and theorising. Finally, ethical considerations have been considered. Outcomes have been discussed, such as the social benefit of arming learners with the tools they require to become valuable contributors to modern society.

In Chapter Four, the data from the three focus groups and twelve interviews has been recorded to describe the findings from each. The researcher has reduced interview data to tables for reflection. These tables have been reduced further for inclusion in the theses, highlighting the most important quotes from each respondent.

4.0 CHAPTER FOUR – INTERVIEW FINDINGS

In Chapter Three, the methodology governing the research has been described in detail, leading to qualitative research involving in-depth interviews with 12 participants and three focus groups.

Chapter Four has recorded in detail the findings of each, beginning with the three focus groups;

- *Focus Group 1; Unitec Post Graduate Students*; the purpose of the interview has been to find out what engages adult learners in tertiary education. 6 Unitec students with an average of 5-8 years of study have been selected. All have completed post-graduate level study and are familiar with the use of an LMS in studies. Post graduate students have been chosen from DoMM, as business insights could be compatible with the chosen discipline of this research thesis.
- *Focus Group 2; CAA management*; the purpose has been to explore existing attitudes within CAA management towards eLearning.
- *Focus Group 3; CAA tutors*; 5 CAA tutors in hairdressing, beauty therapy and special effects. Participants have been shown a working Moodle pilot prepared by the researcher in collaboration with Unitec's Te Puna Ako, (TPA) which includes an induction page for student orientation and a working Moodle page for a second year hairdressing class.

Findings from the focus groups have been considered to shape themes for subsequent individual interviews, described in Chapter 4.

4.1 FOCUS GROUPS

Focus group data has been collected by recording the focus group. Recordings have been listened to by the researcher and responses transcribed. Written responses have been translated into an A3 table. Analysis and reflection on this table has enabled the researcher to condense responses to a shorter A4 table.

From this table of findings, key comments have been extracted for Table 3 to highlight key attitudes.

Table 3: Focus Group Findings.

Focus Questions	FG1UPGS	FG2CAAM	FG3CAAS
Impact of eLearning on student enrolments, student retention and student success	2 <i>"We all knew who was "getting it" and who wasn't because of the online DQs (discussion questions)". "You thought about it all day and stewed over it at night." "Learnt a lot about ourselves and others."</i>	-1 <i>"Servilles has an online program but nobody will want to buy it."</i>	2 <i>"More enrolments; students will spread the word that CAA is the most advanced academy."</i>
Use of an LMS and the internet to improve student engagement	2 <i>"I'd never interact with other students that much until the online DQs." "A creative way of assessment; you have more time to reflect." "Relationship with the lecturer plays an important role in student engagement." "Some students enjoy going beyond the brief; others do what's required to get the grade."</i>	-1 <i>"Our students wouldn't be interested in networking and collaborating."</i>	2 <i>"The work put into shows won't be wasted; video can be uploaded for other students to share." "Everything they do can be uploaded for other students for educational purposes."</i>
LMS and the internet to improve the teaching experience for tutors	0	-1 <i>"Our students wouldn't do homework if it was assigned to them." "Sounds like a lot of work for the tutors keeping up after hours." "Tutors will use the internet to look at things they are not supposed to look at."</i>	2 <i>"It's going to eliminate a lot of paper". "TV/DVD is a fossil." "You can get an idea of who's really interested and who isn't." "Don't want to get a reputation as a "dinosaur". "Really endless the amount of interesting material you can bring into the classroom."</i>
Extra staff training required	0	-1 <i>"Some tutors will take to it like a duck to water. Others will say, "I've taught this way for 30 years; why change now?" "In the future HITO or NZQA may require us to input our results digitally and store learner's evidence online."</i>	2 <i>"So when HITO comes in, will they moderate Moodle instead of the teachers?" "Would we have lessons on this? I don't know how to turn my computer on." "Will CAA pay for the extra training time required to get everyone up to speed?"</i>
Student training in digital literacy tools	1 <i>"The online discussion may be a nightmare for students who are incompetent with technology."</i>	1 <i>"Education must move ahead with the times; we can't hold back because a few students don't have computers."</i>	2 <i>"Want to get them doing blogs; that would really work for makeup; online portfolios." "Generation Y and Generation Z students just live this way; they live in a digital world." "They could probably teach the teachers a thing or two."</i>

Facebook in education

0

-2 “They’ll want to go on Facebook all the time.”
“We should ask why is the course so boring that students have to pull out their cell phones?”

0

Source: Developed by the researcher

4.1.1 FG1UPGS; Focus Group 1, Unitec Post Graduate Students

Impact of eLearning on student enrolments, student retention and student success

FG1UPGS described the traits of their preferred lecturers as; relational teaching; cultural awareness; flexibility in teaching methods; accessibility; technology; team work and case studies. Many of these techniques correlate with the literature review findings for *enablers of creative teaching*, particularly technology (Ferrari, et al., 2009).

FG1UPGS then described how creative teaching impacted on their engagement, leading to more attendance and student success. FG1UPGS described creative learning as “*studying more deeply than required*” to pass the course, confirming literature review findings that students will work harder for the intrinsic motivation of creativity (Amabile, 1998).

FG1UPGS described the creative use of Moodle by a particular lecturer, which all agreed was a highlight of their study. A portion of course marks were allocated to online *discussion questions*, (DQs), which engaged participants and resulted in deeper learning. DQs allowed lecturers to see who is connecting with the course; “*we all knew who was ‘getting it’ because of the DQs*”. This feedback allowed the lecturer to vary their teaching methods and target gaps in learning. FG1UPGS reported that the lecturer responded promptly to online questions. “Varying teaching methods” and “accessibility” have both been identified in the literature review as enablers of creative teaching (Ferrari, et al., 2009).

FG1UPGS described a lack of technical knowledge as a limitation for some students, but said international students had overcome their shyness online and engaged more than during class.

Some preferred the online environment; “*There are none of the distractions you have in class, so you can concentrate.*” FG1UPGS said DQs contributed to a stronger emotional connection to the course, leading to the deep learning described in the literature review

and therefore more successful outcomes (Ruhe, 1998). FG1UPGS said, *“You thought about it all day and stewed over it at night.”*

Use of an LMS and the internet to improve student engagement

FG1UPGS have reflected considerably on one particular paper where course marks have been allocated to online interaction, and have described it as creative teaching; *“I would never interact with other students so much until the DQs.”* FG1UPGS reported that the DQs have lifted engagement, indicating *“flexibility in time”*, and saying the DQs were, *“a creative method of assessment; you have more time to reflect.”* Relational teaching was also considered important; *“Relationship with the lecturer plays an important role in student engagement.”*

LMS and the internet to improve the teaching experience for tutors; neutral.

Extra staff training required; neutral.

Student training in digital literacy tools

FG1UPGS said, *“Online DQs may be a nightmare for students who are incompetent with technology,”* and suggested further training in the use of LMS may prepare students more for the course.

Facebook in education; neutral

4.1.2 FG2CAAM; Focus Group 2 CAA Management

Impact of eLearning on student enrolments, student retention and student success

FG2CAAM has noticed a competitor has an online learning program, but said, *“no-one will want to buy it.”* FG2CAAM discussed whether there could be a boost in income from eLearning, perhaps through distance learning, (DL).

Use of LMS and the internet to improve student engagement

Contemplating whether an LMS would help students collaborate, FG2CAAM said, *“Our students wouldn’t be interested in networking.”*

Use of LMS and internet to improve teaching experience for tutors

Use of an LMS could allow students to access multimedia content later. FG2CAAM acknowledged, *“Our learners are visual learners; they need visual stimulation to keep*

them engaged.” FG2CCAAM also acknowledged an LMS could engage students outside of course hours. While some participants said, *“CAA students wouldn’t do homework,”* others said, *“Beauty therapy students already have a lot of homework and do it all.”* FG2CAAM discussed the ability of students to contact tutors online after hours, commenting; *“It sounds like a lot more work for tutors.”* FG2CAAM added, *“Tutors will look at things they’re not supposed to look at.”*

Extra staff training required

FG2CAAM discussed distance learning, (DL), or online courses with no classroom delivery. One participant described Cecil, the LMS at Auckland University, as *“just a place where lecturers put up notes about what class to go to.”* FG2CAAM hinted at the potential for resistance to change; *“Tutors will say, I’ve taught this way for 30 years; why change now?”* FG2CAAM discussed using an e-book from Cengage Learning. FG2CAAM noted, *“In the future HITO or NZQA may require us to input our results digitally and store learner’s evidence online.”*

Student training in digital literacy tools

FG2CAAM noted that some students do not have the internet and have concerns that those students should be catered for. FG2CAAM believe a computer lab would be a good option. One participant said, *“We can’t hold back because a few students don’t have computers; we must move ahead with the times.”*

Facebook in education

FG2CAAM said they do not want to see students having access to WiFi, citing the reason as, *“They’ll want to go on Facebook all the time.”*

4.1.3 FG3CAAT; Focus Group 3 CAA Tutors

Impact of eLearning on student enrolments, student retention and student success

FG3CAAT said Moodle would pay for itself in attracting more students for recruitment; *“There will be more enrolments; students will spread the word that CAA is the most advanced academy.”*

Use of LMS and the internet to improve student engagement

FG3CAAT said using Moodle will engage students and improve attendance; *“Work put into shows won’t be wasted; video/photos can be uploaded for other students to share.”*

Use of LMS and internet to improve teaching experience for tutors

FG3CAAT discussed whether using Moodle would change lesson delivery. Some participants with LMS experience explained how the tutor is still required to demonstrate and the students will still need to bring models. However, Moodle can increase the amount of resources at hand; *“It’s really endless the amount of interesting material you can bring into the classroom.”* FG3CAAT compared it to current tools; *“TV and DVD are fossils”*. FG3CAAT hinted at the power of meta-data; *“You can see when students have accessed it so you know when they’ve done the work; good for catching students out.”*

FG3CAAT said, *“It’s good for students; they can see where they’re at in their course,”* and, *“good for students with English as a second language; they can review the material later at home.”* Moodle can also help identify students who are falling behind; *“You get an idea of who’s really interested and who isn’t.”* FG3CAAT described the benefits of Moodle; *“Eliminates paper usage; makes us more sustainable.”* FG3CAAT said, *“All that time making our own resources is unnecessary if everything’s digital.”*

Extra staff training required

FG3CAAT were interested in learning how to put information into Moodle, such as; course outline; marking answers; timetables and lesson plans; *“Will we have lessons on this? I don’t know how to turn my computer on.”* Training would be required around uploading and creating links, as well as how privacy settings work in YouTube. FG3CAAT were confused around issues concerning security and password use, although these issues would likely be resolved through the familiarity of usage. FG3CAAT asked if Moodle would, *“replace the teacher,”* saying, *“Will HITO moderate Moodle instead of the teachers?”* While Moodle may assist theory delivery, HITO would still moderate practical assessments and student engagement would still depend upon facilitation by tutors; teachers will still need to teach. The ability to access files from anywhere using iPhone or iPad appealed to FG3CAAT, who believe technology will help communication problems in the company.

Student training in digital literacy tools

FG3CAAT said appealing aspects of Moodle would be the “chat” feature and the ability of students to upload video of their work. FG3CAAT said some students will require guidance with digital literacy tools, and showed interest in, *“getting them doing blogs; something they can present to an employer.”* FG3CAAT added, *“Online portfolios would really work for makeup.”* However, FG3CAAT described fears that students may be technically more capable; *“Students are familiar with technology; they’re on the internet all the time; they could probably teach teachers a thing or two.”* FG3CAAT felt insecure that students already feel comfortable with technology; *“Generation Y and Generation Z students just live in a digital world.”*

Facebook in education; neutral.

4.2 CAAT; CAA TUTORS

After the focus groups had been conducted and a preliminary analysis complete, the researcher commenced a series of in-depth interviews with individuals from key stakeholder groups.

The first group to be interviewed were CAAT; CAA tutors;

- *CAA Tutor 1, (CAAT1)*; hairdressing tutor at CAA for five years.
- *CAA Tutor 2, (CAAT2)*; hairdressing tutor at CAA for five years.
- *CAA Tutor 3, (CAAT3)*; Beauty Therapy tutor at CAA for 3 years.
- *CAA Tutor 4, (CAAT4)*; hairdressing tutor at CAA for three years.

Table 4 shows the findings of these interviews.

Table 4: CAAT (CAA Tutor) findings.

Question	CAAT1	CAAT2	CAAT3	CAAT4
Impact of eLearning on student enrolments, student retention and student success	<p>2 “Students would go for the IT suites and technology... if they had a choice.”</p> <p>“It would impact on their enrolment decision, absolutely.”</p> <p>“Students see an IT suite and think you are clearly spending money on your students”.</p>	<p>2 “Students talk about the lack of technology; it’s pretty embarrassing.”</p> <p>“They’ve seen technology at Servilles and talk about going there to finish second year.</p> <p>“I’ve lost two students to Servilles because of technology.”</p> <p>“Students may go to the competition, but we should try to eliminate factors that might tip the scales.”</p>	<p>2 “I get asked a lot; why don’t we have internet, a computer?”</p> <p>“Students are growing up with technology... in schools, at home; technology is a part of their lifestyle; they would embrace Moodle and reap the benefits.”</p> <p>“Other schools have it and students compare; they think about it when they enrol.”</p>	<p>2 “Students ask, ‘why don’t we have the internet?’ They don’t understand why we don’t have it.”</p>
Use of an LMS and the internet to improve student engagement	<p>2 “Students used the LMS to; access their own page from home; monitor their own credit tracking and progress; create their own content; photos, videos, upload it; upload all their homework.”</p>	<p>2 “They’re visual learners; most hairdressers are”.</p> <p>“Most of their assignments are already done on the internet.”</p> <p>“They get a bit bored. I try to make it fun... but they throw it back in your face.”</p> <p>“PowerPoint would be a lot better.”</p> <p>“I’d feel I have to keep putting stuff on there, otherwise they’d think I’m slack.”</p>	<p>2 “There’s stuff in the course you need the internet for.”</p> <p>“DVDs are too technical; clips from YouTube would be more effective.”</p> <p>“Teaching from a whiteboard is about spoon-feeding.”</p> <p>“Looking at the screen while listening to me verbally explain; all their senses are engaged.”</p> <p>“If attention is dwindling, use a bit of video to pull them back.”</p>	<p>2 “Important not to do it for them, so they are “spoon-fed”.</p> <p>“You show students on the projector, they can see it straight away; it engages them.”</p> <p>“A whiteboard is ancient.”</p> <p>“I think it would engage them more; would make them want to be at CAA.”</p> <p>“I could take a step back and facilitate.”</p>
LMS and the internet to improve the teaching experience for tutors	<p>2 “Resources haven’t been updated in years”.</p> <p>“A picture speaks a thousand words”.</p> <p>“Not only would it make you feel good; it would make you look good; more professional.”</p> <p>“In technology we’re lagging behind”.</p>	<p>2 “You’d be able to do it easier; you can go straight online, and there it is”.</p> <p>“Just type anything on YouTube and it comes up with demos; I’ve learnt a lot from it myself.”</p> <p>“Sometimes I think I’ve been a bit slack, not because of the way I’m teaching, but because of what I’ve got to teach with.”</p> <p>“I’d feel like I’m doing my job a lot better.”</p>	<p>2 “Lack of internet access was frustrating when I started; why don’t we have PowerPoint, projectors?”</p> <p>“It’s all textbooks and whiteboards again; I feel like I’ve gone back twenty years”.</p> <p>“Just quickly go onto Moodle, find the video clip and bang, there it is; reinforces what you’ve taught, makes it more authentic.”</p> <p>“It would impact on my job satisfaction if we had internet.”</p>	<p>2 “We should be able to let the students log on and do their thing. That’s the modern thing to do.”</p> <p>“At AUT teachers used PowerPoint; as an adult learner, it engaged me; it used all your senses.”</p> <p>“The lecturer said, ‘let the students use their cell phones; this is advanced teaching.’ It opened my eyes.”</p> <p>“Sometimes I ask who has the internet on the phone so I can show the class the picture; it’s embarrassing.”</p>

			<i>"As a tutor; I'd be seen to be in the 21st century; I'd feel more up to date."</i>	<i>"Moodle would make my life so much easier."</i>
Extra staff training required	2 <i>"Basic understanding; limited to what I have been shown by other tutors." "Used an LMS before; put together visual folder; all visuals came from the internet." "Would need training in software; I'd be open to it".</i>	2 <i>"I would need training so I don't make a dick of myself in front of my students." "I wouldn't mind doing the training because it would improve my teaching." "It would make me more employable if I left CAA, having that skill."</i>	2 <i>"People are scared of change; especially with technology." "Older tutors were reluctant at first; once they understood the benefits, they were as enthusiastic as everyone else." "If CAA doesn't do something now, we're going to be left behind."</i>	2 <i>"Get all the tutors and information together and work on resources as a team; they could do wonders." "Online training should be available at work; life's so fast, when you get home, you don't feel like going online."</i>
Student training in digital literacy tools	0	0	1 <i>"All of them have iPhone; it's a job to unglue them from their hands." "A few aren't into computers, but once they understand how something works, they'll be alright."</i>	2 <i>"Students would come every day because it would be so interesting to them. " "They'd be gaining something; that would make them feel 8 grand is worth it." "Little ones know how to use their phones; if they can do this in primary school, what will they be like as adults?"</i>
Facebook in education	-1 <i>"My students overseas 'face-booked' each other through the 'chat forum' in the LMS instead of Facebook."</i>	0	0	1 <i>"An invisible marketing medium CAA hasn't got their head around yet." "Management are scared students will go on Facebook; you can turn that around and use it as a teaching resource".</i>

Source: Developed by researcher

4.2.1 CAAT1; CAA Tutor 1

Impact of eLearning on student enrolments, student retention and student success

CAAT1 has seen the IT suite at Servilles, CAA's main competitor, and says it will impact on student enrolments; *"They see an IT suite and think you are clearly spending money on your students."*

Use of LMS and the internet to improve student engagement

CAAT1 has used LMS in previous employment, where students used it to; access their page from home; monitor credit tracking; upload homework, content, photos and videos.

Use of LMS and internet to improve teaching experience for tutors

CAAT1 said, *"In technology we're lagging behind."* CAAT1 believes access to the internet at work could improve class lessons through PowerPoint presentations; *"Resources haven't been updated in years; a picture speaks a thousand words"*.

Extra staff training required

CAAT1 said their digital literacy was, *"Limited to what I have been shown by other tutors."* They acknowledge they would need further training, and said, *"I'd be open to it"*.

Student training in digital literacy tools; neutral.

Facebook in education

CAAT1 described previous experience with LMS; *"Students used the chat tool built into the LMS to 'face-book' each other, instead of using Facebook."*

4.2.2 CAAT2; CAA Tutor 2

Impact of eLearning on student enrolments, student retention and student success

CAAT2 believes a lack of technology at CAA impacts on re-enrolments; *"They've seen technology at Servilles and talk about going there for second year."* While CAA will always lose students to competitors, *"We should eliminate any factors that tip the scales."*

Use of LMS and the internet to improve student engagement

CAAT2 noted, *"Hairdressers are visual learners; they get bored with theory lessons."* CAAT2 said, *"PowerPoint would be a lot better."* With internet access, CAAT2 would direct students to information; *"It prepares them for second year if they look at more advanced stuff on websites."* Concerning homework, CAAT2 said, *"Most of their assignments are done on the internet."*

Use of LMS and internet to improve teaching experience for tutors

CAAT2 said, *“Students talk about the lack of technology; it’s pretty embarrassing.”* If projectors, the internet and LMS were available CAAT2 said, *“I’d feel like I’m doing my job a lot better.”* Teaching would be easier; *“You can go straight online, and there it is”*. CAAT2 would, *“show students around websites; what’s current.”* YouTube would help fill gaps in their own delivery; *“If I need to brush up on a skill I’ll go online and watch demos”*. CAAT2 noted, *“It’s better to put hand-outs online; less paper.”*

Extra staff training required

CAAT2 usually brings a smart-phone to work and would bring a laptop if there was internet. CAAT2 has used Apple in the past but would be pleased to up-skill to Windows; *“Wouldn’t mind doing training because it would improve my teaching”*. It could add to their resume; *“Having that skill would make me more employable.”*

Student training in digital literacy tools; neutral.

Facebook in education

CAAT2 has used Facebook to build networks for online business and noted that sharing this experience could help students with marketing throughout their career.

4.2.3 CAAT3; CAA Tutor 3

Impact of eLearning on student enrolments, student retention and student success

CAAT3 said, *“I get asked a lot,”* why CAA has no technology; *“I do feel we need something, definitely.”* CAAT3 said, *“Students are growing up with technology; it’s part of their lifestyle.”* Comparing technology at providers could be an issue for enrolments; *“Students compare, they think about it when they enrol.”*

Use of LMS and the internet to improve student engagement

DVDs that have been used are, *“too technical; clips from YouTube would be more effective.”* CAAT3 said, *“Teaching from a whiteboard is about spoon-feeding; it’s outdated and boring.”* Projectors would, *“definitely be of benefit; brilliant if we had one in each room, just hook your computer into it; much better than dragging a big TV around.”* CAAT3 reinforced the literature review findings that multimedia can support a variety of

teaching techniques to boost engagement; *“If attention is dwindling, use a bit of video to pull them back.”*

CAAT3 has used Moodle in the past and described it as the, *“most effective”* teaching tool; *“Reinforces what you’ve taught; makes it more authentic.”* CAAT3 said all students have a computer or smart phone and could access Moodle at home. Students need face-to-face for practical, but theory could be DL; *“eLearning’s where it’s going, I think”*. Students could use Moodle to complete *“self-assessment reports”*, so that tutors can judge the impact teaching resources have had on student engagement.

Use of LMS and internet to improve teaching experience for tutors

Access to the internet could have an impact on staff retention; *“It would impact on my job satisfaction if we had internet and Moodle.”* CAAT3 said, *“The lack of internet is frustrating if you come from an environment where technology is part of your teaching resource. Why don’t we have PowerPoint and projectors? It’s all textbooks and whiteboards again; I feel like I’ve gone back twenty years”*. CAAT3 said, *“It would have an impact on me as a tutor; I’d be seen to be in the 21st century.”*

Extra staff training required

While CAAT3’s digital literacy is, *“not the best,”* they can, *“figure stuff out.”* CAAT3 has had previous experience with Moodle; *“I would need a refresher course; it takes a while to get your head around how to upload to it.”* CAAT3 described their previous employer’s shift to Moodle; *“There was panic; especially from tutors who had been there a long time.”* Resistance to change was apparent; *“Older tutors were reluctant, but once they understood the benefits, they were as enthusiastic as everyone else.”* CAAT3 recommended that CAA puts projectors in every room and provides laptops for staff. CAAT3 noted, *“CAA needs to get into the 21st century; it’s the age we live in.”* Change is crucial; *“If CAA doesn’t do something now, we’re going to be left behind.”*

Student training in digital literacy tools

CAAT3 noted; *“I think students would enjoy the internet; there are a lot of apps for anatomy and physiology.”* CAAT3 said, *“All of them have iPhones; it’s a job to unglue them from their hands.”* CAAT3 noted, *“A few students aren’t into computers but once they understand how it works they’ll be alright.”*

Facebook in education; neutral.

4.2.4 CAAT4; CAA Tutor 4

Impact of eLearning on student enrolments, student retention and student success

Like CAAT2 and CAAT3, CAAT 4 said the absence of classroom technology could affect the learner's choice of provider; *"Students ask, 'why don't we have the internet?' They don't understand why we don't have it."*

Use of LMS and the internet to improve student engagement

CAAT4 described an adult learning experience where deep learning resulted from multimedia. As a result, CAAT4 has asked students to video the class; *"It improved me too; I turned the camera on myself teaching the lesson."* CAAT4 said, *"You show students on the projector, they can see it straight away; it engages them."* The internet could boost engagement; *"I think it would really engage them; would make them want to be at CAA; in this day and age, they can relate to it easily."*

Use of LMS and internet to improve teaching experience for tutors

CAAT4 believes Moodle would improve teaching; *"I could set up lesson plans and timetables on the computer; it would be so much easier to deliver lessons; I'd be way more organized; Moodle would make my life so much easier."* CAAT4 said, *"If I had the internet at work, I wouldn't spend so much time at night making resources."* CAAT4 considers smart phones a resource; *"Sometimes I ask who has the internet on their phone so I can show the class a picture; it's embarrassing."*

CAAT4 said, *"We should be able to let the students log on and do their thing. That's the modern thing to do."* CAAT4 has focussed on self-improvement; *"Students could put feedback on Moodle; that would help me improve my teaching."*

Extra staff training required

CAAT4 said when tutors are required to complete online courses, it could be used as a professional development opportunity; *"Tutors currently doing the literacy course go to McDonalds to use the WiFi; doing it online together could be a good team building exercise."* CAAT4 said, *"Online training should be available to tutors during work time; life's so fast; when you get home, you don't feel like going online."*

Student training in digital literacy tools

CAAT4 has introduced to students professional development topics which are outside the NZQA curriculum; *“How does a salon function; what are the skills required for a manager? If computers were available tutors could show them how to do online client bookings; client records.”* CAAT4 believes extra training in digital literacy tools would boost employment opportunities; *“They’d be gaining something from the course which would make them feel 8 grand is worth it.”*

Facebook in education

CAAT4 has used Facebook to network with the industry; *“Marketing is one of the biggest things for me in hairdressing.”* CAAT4 set up a Facebook page for the class; *“Management are scared students will go on Facebook; you can turn that around and use it as a teaching resource.”* CAAT4 believes Facebook has a role in marketing; *“There’s so much more CAA could do online to involve people.”* CAAT4 said; *“I’ve got a few students to sign up to CAA through Facebook; it’s a good way to get enrolments.”*

4.3 CAAS; CAA Students

CAA students have been interviewed to provide a student perspective on the importance of technology in learning.

- *CAA Student 1, (CAAS1)*; a hairdressing student for two years, employed as stylist.
- *CAA Student 2, (CAAS2)*; a hairdressing student at CAA for two years; interview has included observation of client interaction on the work site.

Table 5 shows the findings of these interviews.

Table 5: CAAS (CAA Student) findings.

Focus Questions	CAAS1	CAAS2
Impact of eLearning on student enrolments, student retention and student success	2 <i>"I'd see all that eLearning and computer stuff and think, 'yeah, I could really go there'."</i> <i>"Wouldn't mind paying course related costs if you could see you're deriving some benefit from it."</i>	0
Use of an LMS and the internet to improve student engagement	2 <i>"Most people I know at CAA experienced the same frustration; no internet."</i> <i>"Whip out your phone, look up the guidelines you have to follow and 'bam', there it is."</i> <i>"If students see a tutor they know in the video they'd find it much more appealing and hook into it."</i> <i>"You could go straight onto the site and see what you've got tomorrow; it would be easier to start looking for a model."</i> <i>"Life without the internet would be pretty f'd up."</i>	1 <i>"They don't know what they want; I show them samples from the internet."</i> <i>Creating digital posters; "I create these when I'm sitting at home getting bored; I just go creative"</i> <i>Taking photos; "I like doing memories; I like to create something for friends."</i>
LMS/internet to improve the teaching experience for tutors	0	0
Extra staff training required	0	0
Student training in digital literacy tools	2 <i>"I'd call myself digitally literate; learnt all that stuff at school".</i> <i>"Using Tumblr to make a multimedia CV? That's an awesome idea. You could say, here's the link to my e-portfolio. That would be so much better."</i> <i>"At work I use the computer to pull up client records, print it out, put in a folder for next day; everything is sorted, right down to what sort of coffee they have."</i> <i>"I reckon it would be better if CAA provided training on how to use computers."</i>	2 <i>"Got iPad to help with good ideas for my client; and to help me as well; it's very easy and simple".</i> <i>"Have got thousands of photos on iPad, helps me talk to my client; I leave it in front of them while I cut their hair."</i>
Facebook in education	-1 <i>"I see haircuts people have done on Facebook all the time, but it doesn't go anywhere; your friends see it, and that's it."</i>	1 <i>"On Facebook I put all my memories of course; about 172 albums."</i> <i>"I like making memories; it's good for when you grow up."</i>

Source: Developed by researcher.

4.3.1 CAAS1; CAA Student 1

Impact of eLearning on student enrolments, student retention and student success

CAAS1 pointed out that CAA's main competitor has eLearning; *"I'm a computer nerd, so I'd see all that computer stuff and think, "yeah, I could really go there".* CAAS1 confirmed CAAT4's comment that students would see it as adding value to the course; *"Wouldn't mind paying course-related costs if you could see you're deriving some benefit from it."*

Use of LMS and the internet to improve student engagement

CAAS1 said, *"Life without the internet would be pretty f'd up."* CAAS1 described the frustration of not having the internet at CAA; *"It would've been so much better; you could whip out your phone, iPad, look up the guidelines you have to follow and 'bam', there it is."* CAAS1 said, *"I'd use it for finding info on course related things; YouTube, latest fashions, all the fun stuff. It would be way better if you did all your theory on there."* CAAS1 said, *"The videos they show are really old and boring; not engaging."* CAAS1 believes it would boost engagement if CAA made its own content; *"If students saw a tutor they know they'd find it much more appealing and hook into it."* An LMS could improve planning for models; *"Many times I forget the timetable; if you could go straight onto the site and see what you've got tomorrow, it would be easier to look for a model."*

Use of LMS and internet to improve teaching experience for tutors; neutral.

Extra staff training required; neutral.

Student training in digital literacy tools

CAAS1 said the internet would have an impact on learning; *"I search for haircuts myself online anyway; especially different techniques."* CAAS1 talked about using blogs to create an ePortfolio; *"That'd be pretty cool; it would have made the course so much better."* CAAS1 says, *"When you go to an interview, you could say, here's the link to my e-portfolio; it would open up a lot more opportunities"*. CAAS1 described industry ICT usage in their current employment; *"At work, they have WiFi, mainly for the iPad."* The computer is used to make bookings and print out client records; *"Everything is sorted, right down to what sort of coffee they have."*

Facebook in education

CAAS1 said Facebook has only been useful for finding models; *“I see haircuts people have done on Facebook, but it doesn’t go anywhere; your friends see it and that’s it.”*

CAAS1 said Facebook has not been allowed at work; *“I don’t think they monitor it, but they don’t give out the password.”*

4.3.2 CAAS2; CAA Student 2

Impact of eLearning on student enrolments, student retention and student success; neutral.

Use of LMS and the internet to improve student engagement

CAAS2 uses iPad to support the consultation process, with a vast library of images sourced online; *“They don’t know what they want; I show them samples from the internet.”*

CAAS2 said use of iPad as a consultation tool has provided better service to their customers. CAAS2 brought their iPad to CAA every day, along with a camera to photograph work; *“It’s good for memories.”* CAAS2 has used image editing software to create unique images; *“I create these when I’m sitting at home getting bored; I just go creative”.*

Use of LMS and internet to improve teaching experience for tutors; neutral.

Extra staff training required; neutral.

Student training in digital literacy tools

CAAS2 has a large library of digital images; *“I got iPad to help with good ideas for my client; and to help me as well.”* English is a second language for CAAS2. However, digital literacy has enabled CAAS2 to overcome the challenges of verbal communication in a commercial environment. CAAS2 has used the iPad during study at CAA to assist learning and would have benefitted from more digital literacy training.

Facebook in education

CAAS2’s photographs have been catalogued on Facebook; *“I like to create something for friends.”* CAAS2’s time at CAA was about more than study; it was also about developing friendships. CAAS2’s experiences have been memorialized in 172 albums on their Facebook page, including; work experience; shared lunches and cultural events.

4.4 IR: Industry Representatives

Table 6: IR (Industry Representatives) findings.

Focus Questions	IR1SO	IR2HAR	IR3USR
Impact of eLearning on student enrolments, student retention and student success	0	2 <i>“CAA may fall behind in more than just student success if they do not adopt eLearning”.</i> <i>“Reporting will rely heavily on technology in the future; instant information required to maintain competitiveness.”</i> <i>“Future students use technology from the cradle to the grave”</i> <i>“2 year olds use ICT at home and at school; for them, a world without ICT it is incomprehensible.”</i>	0
Use of an LMS and the internet to improve student engagement	1 <i>“Asked my staff; they were completely into the concept of eLearning, as long as they could stay home and do it.”</i>	2 <i>“Tertiary students already have experience with blended learning; going back to pen and paper forces them to develop a new learning style”.</i> <i>“They are blogging and vlogging, tweeting and texting; used to instant response; ‘leave a message’ doesn’t work for them”.</i> <i>“Computer animated video of a cross-section of the hair shaft is more powerful than a clumsy drawing.”</i>	1 <i>“Lecturers still don’t know how to use Moodle very well; they forget to upload stuff.”</i> <i>“Lecturers still use Moodle as a drop box.”</i> <i>“Students choose to use Facebook for online communications.”</i> <i>“Lecturers need to use the medium more effectively to encourage collaboration and not make their pages so boring.”</i>
LMS and the internet to improve the teaching experience for tutors	1 <i>“Photoshoots are totally digital now; do all the post production in Photoshop.”</i> <i>“Why even do seminars? Why not leave me in Auckland and just webcast it?”</i> <i>“Seems to work in every other industry in the world”.</i> <i>“Those people who start to use the internet for education might not measure up to their own hype.”</i>	2 <i>“The internet and Moodle could improve; eLearning; shared resources; student vlog/bog; tutor vlog/blog; local storage of student files; instant access to portfolios”.</i>	0
Extra staff training required	0	2 <i>“Wella’s using iPads as teaching tools; information updated centrally so info is always current.”</i>	2 <i>“Institutions really need to learn how to engage students online and talk their language if they want students interacting on these mediums.”</i>

		<i>“Working with suppliers of POS; digital storage of client records, financial records.”</i>	
Student training in digital literacy tools	2 <i>“Computer runs everything; it’s really sharpened us up.” “We don’t have “look-books” now, we have an iPad.” “Staff use the internet and iPad as a consultation tool.” “Even our staff say, “I saw how to do this on YouTube.” “Would it impact on our choice of applicant if they had an eportfolio? Totally; it shows they are thinking about how to edit their image to an employer.” “First thing we do is look them up on Facebook and find all the reasons we would never employ them.”</i>	2 <i>“Use of ICT in consultation; internet for style images; blogs; vlogs; ICT in after care.” “Digital literacy less likely to be a job requirement currently; will become more important in the future.” “Changing attitudes of younger hairdressers are definitely stimulating change.” “Hairstylists are entering the industry with higher levels of digital intelligence, even if their literacy is not great.”</i>	2 <i>“One lecturer showed me how to use Twitter; I really appreciated they took the time to show me how to use a modern communication tool.” “People look at you as if you’re crazy if you don’t have LinkedIn.” “I know people who got a job because they put their photo up on Twitter.” “It is essential for lecturers to move students from informal communication mediums such as Facebook to more formal channels such as blogging, LinkedIn, making an ePortfolio.”</i>
Facebook in education	-1 <i>“As long as it doesn’t interfere with customer service, it’s ok.” “Without a loyalty program, there’s nothing to market.” “The problem with blogging is everyone’s got a hyper-opinion of themselves; ‘come in, we’re awesome’; so is everyone else.”</i>	1 <i>“Facebook common means of reaching clients; viral marketing understood and valued.” “Salon owners will have to get more tech savvy to keep up with young stylists.”</i>	2 <i>“Teacher initiated pages are not interesting to students; do not engage them.” “Lecturers use it like old school communication channels; long boring prose.” “If students are telling you this is the education medium they want to use, why wouldn’t you let them?”</i>

Source: Developed by researcher.

To provide a depth of field on the relevance of eLearning and ICT to target industries which will employ graduates, three industry representatives have been interviewed;

- *Industry Representative 1 Salon Owner, (IR1SO);* salon owner for 16 years.
- *Industry Representative 2 Hairdressing Association Representative, (IR2HAR);* spokesperson of the New Zealand Regional Hairdressing Association, (NZARH).
- *Industry Representative 3 Unitec Student Representative, (IR3USR);* elected student representative for Unitec Student Union, (USU) in charge of online student communications.

Table 6 shows the findings of those interviews.

4.4.1 IR1SO; Industry Representative 1 Salon Owner

Impact of eLearning on student enrolments, student retention and student success

IR1SO has reflected on their business goals; *“Digital will never be the core business.”* IR1SO said; *“You can reach a bigger audience; but how can a hairdresser do that when their audience is in the chair one at a time?”* There is a new market opening for training other hairdressers; *“Even our staff will say, “I saw how to do this on YouTube.”*

Use of LMS and the internet to improve student engagement

IR1SO has asked their staff for their opinion; *“They were completely into the concept of eLearning, as long as they could stay home and do it.”*

Use of LMS and internet to improve teaching experience for tutors

IR1SO reflected on the experience of educators; *“The internet allows you to hand over information; how do you turn that into financial gain?”* When IR1SO has presented seminars the fee did not cover the provision of multimedia; *“Why do seminars; why not leave me in Auckland and just webcast it?”* The hairdressing industry has been slow to adopt online education, yet, *“It seems to work in every other industry in the world”*. The internet could expose weaknesses; *“People might not measure up to their own hype.”*

Extra staff training required; neutral.

Student training in digital literacy tools

IR1SO's business computer is used for, *“pretty much everything”*; accounting software; salon software, stock control and putting together digital scrapbooks; *“We don't have “look-books” now, we have an iPad”*. IR1SO said, *“Technically it hasn't made us more profitable, but it's streamlined our systems; it runs everything; it's really sharpened us up.”* IR1SO described a similar work profile to CAAS1; *“Client records are attached to the appointment page; history, purchases”*. Apprentices have a level of access; *“Stuff-ups happen all the time, from zoning out.”* iPad runs all contact with clients and staff do not have WiFi access; *“They're all on 3G anyway.”* WiFi for clients is an on-going debate; *“I think it's going to be an add-on cost of doing business in the future, like serving coffee.”* IR1SO would prefer not to, *“lose that personal touch”* so they do not use the automated texting service; *“We surveyed our clients to see how they prefer to be contacted and tailor it to the individual; phone; text; or email.”* IR1SO has a, *“no cell phone”* rule in the salon, *“but we know it happens.”*

ICT training is on an individual basis as staff come to terms with the system. IR1SO said, *"We assume all young people are technically savvy."*

However, an ePortfolio could make an impact on IR1SO in a job interview; *"Would it impact on our choice if they had an ePortfolio? Totally; it shows they're thinking how to edit their image to an employer."*

Facebook in education

IR1SO's salon has a Facebook page for sourcing training models. However, they do not use Facebook for marketing; *"Without a loyalty program, there's nothing to market."* Regarding staff use; *"Do it in your own time, not in our time."*

4.4.2 IR2HAR; Industry Representative 2, Hairdressing Association Representative

Impact of eLearning on student enrolments, student retention and student success

IR2HAR said, *"Future students are using technology from the cradle to the grave."* IR2HAR noted, *"Reporting will rely heavily on technology in the future; instant information will be required for CAA to remain competitive"*.

Use of LMS and the internet to improve student engagement

IR2HAR said tertiary students already use blended learning; *"Going back to pen and paper will force them to develop a new learning style, wasting precious study time."* IR2HAR noted the impact of multimedia; *"A computer animated video of a dissected hair shaft is more powerful than a clumsy drawing."* eLearning could increase engagement; *"Use of the internet to reinforce real world scenarios in industry adds a new dimension to the "read, write, remember" ethos."*

Use of LMS and internet to improve teaching experience for tutors

IR2HAR believes the use of the internet and LMS could improve the teaching experience due to; *"shared resources; tutor vlog/blog; local storage of student files and instant access to ePortfolios"*.

Extra staff training required

IR2HAR believes it will be important for CAA to keep teachers up to date with ICT usage in the industry. IR2HAR has been working with Wella to use iPads as teaching tools,

sharing information across the organization which is updated centrally. IR2HAR has also been working with suppliers of point-of-sales, (POS) solutions, digital storage of client records and financial records.

Student training in digital literacy tools

IR2HAR noted, *“Attitudes of younger hairdressers are definitely stimulating change; hairstylists are entering the industry with higher levels of digital intelligence, even if their literacy is not great.”* IR2HAR said, *“Websites, integrated POS and sophisticated digital marketing are commonplace in the industry; the best salons use digital technology to promote their business using Facebook and Twitter”.*

Like IR1SO and CAAS1, IR2HAR said, *“Salons use iPads for consultations and YouTube to source latest techniques.”* Client access to WiFi is, *“an added benefit.”* While digital literacy has not been a job requirement, *“It’s likely to become more important in the future”.*

Facebook in education

IR2HAR said, *“Facebook is a common means of reaching clients; viral marketing is understood in the industry and valued.”*

4.4.3 IR3USR; Industry Representative 3, Unitec Student Representative

Impact of eLearning on student enrolments, student retention and student success; neutral.

Use of LMS and the internet to improve student engagement

IR3USR said, *“Lecturers still don’t know how to use Moodle very well; they forget to upload stuff.”* IR3USR said, *“Lecturers need to use Moodle effectively to encourage collaboration; not make their pages so boring.”*

Use of LMS and internet to improve teaching experience for tutors; neutral.

Extra staff training required

IR3USR said, *“Institutions need to learn how to engage students online and talk their language if they want to get students interacting on these mediums.”*

Student training in digital literacy tools

A lecturer has shown IR3USR how to use Twitter; *“I really appreciate they took the time to show me how to use a modern communication tool.”* IR3USR said, *“People look at you as crazy if you don’t have LinkedIn; I know people who got a job because they put their photo on Twitter.”* IR3USR said, *“Students need to be shown how to use Facebook and Twitter as marketing tools.”*

Facebook in education

IR3USR said students choose Facebook as a communication medium; *“Students are already on Facebook for their life; they’re familiar with the interface.”* A lot of study has occurred outside the academic framework; *“Students are already using online communications to assist their learning but unknown to the lecturer”.* Moodle will never work like a social media site; *“Facebook’s just an easier way to communicate than trying to do it on Moodle.”* IR3USR said, *“Facebook is always on at the bottom of the page while they’re working on an assignment.”* IR3USR said, *“Some lecturers use Facebook for communications but it’s really boring, fails to engage students; lecturers use Facebook like old school communication channels, with really long boring prose.”*

4.5 EAA; eLearning Academic Advisors

eLearning Academic Advisors have been interviewed to provide a depth of insight on the benefit of shifting education to an online medium, along with understanding of challenges institutions have encountered training educators for an LMS.

- *eLearning Academic Advisor 1, (EAA1)*; current role is to help lecturers find the right eLearning tools for their program; focussed on Moodle for 8 or 9 years.
- *eLearning Academic Advisor 2, (EAA2)*; eLearning advisor at Unitec.
- *eLearning Academic Advisor 3, (EAA3)*; eLearning Academic Advisor at Unitec; conducts research on the impact of Moodle on student engagement.

The findings of these interviews have been recorded in Table 7.

Table 7: EAA (eLearning Academic Advisors) findings.

Focus Questions	EAA1	EAA2	EAA3
Impact of eLearning on student enrolments, student retention and student success	<p>2 <i>“Primary school students get exposure to developing a digital identity; their needs will be different to students coming out of high school now.”</i></p> <p><i>“There’s still a role in the future for distance learning.”</i></p> <p><i>“Tertiary students of the future are not going to sit in a lecture theatre and listen for two hours;”</i></p> <p><i>“They’re coming and we have to be ready.”</i></p>	<p>2 <i>“The integration of the ‘e’ and the ‘learning’ is so tight, it’s very hard to say, ‘that is eLearning’ and ‘this isn’t’ “.</i></p> <p><i>“One thing that will hit big time is learning analytics; what pages you go to; where you hit; that will become the way we measure success; retention; engagement.”</i></p> <p><i>“What’s missing online is someone to sum up with a depth of experience; pull thought processes into a point where it becomes real learning.”</i></p> <p><i>“This isn’t business; this is education? I find that attitude bizarre; of course we’re a business.”</i></p>	<p>1 <i>“Blending face to face with online learning may be better; depends on the students; some work better on their own.”</i></p> <p><i>“Maybe it comes down to who your students are; what you’re trying to teach.”</i></p>
Use of an LMS and the internet to improve student engagement	<p>2 <i>“Adult learners want to get what they need to know and get out.”</i></p> <p><i>“If there’s no face to face in the classroom, learners should be doing something on the job where they can apply the learning.”</i></p> <p><i>“They need face to face; you must have collaboration, communication;”</i></p> <p><i>“They’ve watched all the videos online; when you get to the classroom they’re excited about what they’re going to do; it shouldn’t mean less classroom time.”</i></p>	<p>2 <i>“The traditional lecture model is boring; not really useful.”</i></p> <p><i>“When they get to the workplace, that’s where their learning will come from; a day to day conversation in a small team of people working things out; why the hell are we not training our students for that?”</i></p> <p><i>“In the same way students will not sit through that lecture if it’s dull, they will not engage with Moodle if it’s dull.”</i></p>	<p>2 <i>“Pick your place in the continuum and that’s your course; all eLearning vs none.”</i></p> <p><i>“Most teachers aren’t confident using it. Students said, ‘why should we use it if teachers aren’t?’”</i></p> <p><i>“A typical Moodle page is a huge step back; a very uncool step.”</i></p> <p><i>“I will put an electronic poster up now, make it more visual.”</i></p> <p><i>“The ‘scroll of death’; they don’t want to read down a whole list of text.”</i></p>
LMS and the internet to improve the teaching experience for tutors	<p>2 <i>“Students are holding teachers accountable who aren’t providing interaction on Moodle.”</i></p> <p><i>“Lecturers say, ‘it would be too hard for students online’; actually, their low confidence is the problem.”</i></p> <p><i>“There is no one size fits all approach; the teachers see they are on a continuum now.”</i></p> <p><i>“Moodle is not the be all and end all, just one tool in your toolkit.”</i></p>	<p>2 <i>“It’s a starting point, a way of interfacing students to staff and course documentation; learning outcomes; assessments; readings; YouTube clips; HTML link to a voice thread; straight from Moodle; fantastic.”</i></p> <p><i>“There’s a ‘disconnect’ between what industry thinks its graduates should look like and how we teach our students.”</i></p>	<p>2 <i>“To master the potential of Moodle, you need to design the page more attractively; upload video files to make it interesting; write for the web.”</i></p> <p><i>“Are you going to check it every day and answer forum questions or post new things; what’s your time commitment?”</i></p> <p><i>“What really works is putting up class notes; but it’s also ruining the art of note-taking.”</i></p>

		<p><i>"If you took a video of someone doing a haircut there's no haptic feedback; what did it feel like?"</i></p>	
Extra staff training required	<p>2 <i>"There are people who don't cope with change and find the whole thing stressful."</i></p> <p><i>"Some departments were too busy 'doing the do' to think about 'what we do'; those departments haven't progressed as much as the others."</i></p> <p><i>"We put the teachers in the position of being the learner; gets them away from that teacher/student model; more of a social constructivist approach."</i></p> <p><i>"Now people are aware that there's a whole continuum of eLearning, from basic to very immersive online experience."</i></p> <p><i>"You are adding value, but you are also adding to the teacher's work time."</i></p> <p><i>"You don't need more training time sitting in a computer room; you need more conversation."</i></p>	<p>2 <i>"The tool's not the issue; what's of interest is what they're doing with it; what's the pedagogy? Moodle doesn't get in the way of all that"</i></p> <p><i>"We should say, "do what you like, make sure it matches your learning outcomes, graduate profile and is appropriate to industry; then get out of the way."</i></p> <p><i>"Students are comfortable inhabiting a digital world but staff are still struggling."</i></p> <p><i>"Be flexible; whatever solution you choose will change really quickly; it doesn't work as well as you want; staff members do it another way or students will demand different things."</i></p>	<p>2 <i>"A lot of teachers are not good at using computers; throw in an eLearning platform and they'll get overload."</i></p> <p><i>"Look at up-skilling people en masse; say, 'by the end of the year, all teachers need to achieve these skills in Moodle'; set some easy targets."</i></p> <p><i>"You end up with this digital divide within staff; some community of practice will help them all move forward on the basics together."</i></p> <p><i>"There's a resistance; 'we've always done it this way; why should we change?'"</i></p> <p><i>"I want to be face to face with my students', is often a mask for teachers' fear of not being able to do it."</i></p> <p><i>"Train the staff; if they can't use it, nothing will work."</i></p> <p><i>"One old teacher said, 'yeah, I'm scared of this but I'm determined to crack it.'"</i></p>
Student training in digital literacy tools	<p>2 <i>"As a learner, with Google it's so hard to know which resources are accurate."</i></p> <p><i>"Eportfolios show what you're capable of, but also add depth to your learning; a way of demonstrating your understanding of the subject."</i></p>	<p>2 <i>"Collaborative tools are it; ones that are focused on education."</i></p>	<p>1 <i>"Despite Moodle's drawbacks, it's a good place to start."</i></p> <p><i>"Teachers take control over your work and use your blog as a training tool for later courses; it's awful; it felt very violating."</i></p> <p><i>"If somebody saved a copy, it's never private again; it's become public domain."</i></p>
Facebook in education	<p>-2 <i>"Facebook isn't secure; the content is owned by Facebook."</i></p> <p><i>"A tertiary education provider must meet requirements about how we communicate with our students."</i></p> <p><i>"We get students to use blogs rather than Facebook."</i></p>	<p>-2 <i>"Every class should have its own Facebook, but the teacher should be nowhere near it."</i></p> <p><i>"If staff won't come to Moodle training, you can guarantee they won't come to basic Facebook training."</i></p> <p><i>"Facebook's designed to celebrate extremes."</i></p> <p><i>"Facebook is not a useful educational tool; there's no pedagogical thinking."</i></p>	<p>-1 <i>"We tried setting up a Facebook page for the class and the students never went on it."</i></p> <p><i>"Students sent some people to Moodle as "scouts" to find out what's going on; they went on Facebook to tell everyone else."</i></p> <p><i>"Things from Facebook could be taken off and sent elsewhere; it's now external"</i></p>

	<p><i>"There has to be a space where students can just be students."</i></p>	<p><i>to the institution; it becomes public."</i> <i>"Maybe teachers just shouldn't go there."</i></p>
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Source: Developed by researcher.

4.5.1 EAA1; eLearning Academic Advisor 1

Impact of eLearning on student enrolments, student retention and student success

EAA1 said, *"The impact of eLearning on student success depends on the teacher."* DL should not be dismissed; *"There's still a role in the future for distance learning"*. EAA1 discussed *massive open online courses, (MOOCs); "MOOCs represent the chance to participate in a course led by the world's best; the challenge for the future is; how can we locally build communities of practice to support that?"*

Use of LMS and the internet to improve student engagement

EAA1 said, *"It's harder as a teacher today to decide what tools to use to get student engagement up; all that 'digital literacy' stuff."* While FG2CAAM believes eLearning would result in less classroom time, EAA1 disagreed; *"They've watched videos online; when they get to class they're excited about what they're going to do; it doesn't mean less classroom time."* There are clear advantages to blended learning; *"If you get the eLearning mix right, you get a lot more student 'doing' and learning from each other."* Hands-on trades such as hairdressing could never be DL; *"You've got to have conversations with other people in your class"*.

Use of LMS and internet to improve teaching experience for tutors

Students at Unitec have been driving the change; *"Students are holding teachers accountable who aren't providing interaction on Moodle."* Moodle has a, *"structured, teacher-centric approach,"* and is, *"not the be-all and end-all, just one tool in your toolkit."* However, EAA1 has enjoyed the ability to incorporate media such as YouTube, pictures and video. Applied trades have been strong Moodle users; *"As a teaching team, they sit down and design things that work for students and ask how they can do more assessments online."*

Extra staff training required

EAA1's expertise has been in training teachers; *"There's no one size fits all approach; people are now aware there's a whole continuum of eLearning, from basic to very*

immersive online experience.” Resistance to change has been the biggest HR challenge; *“There are people who don’t cope with change and find the whole eLearning thing stressful.”* The main issue has been, *“Fear of technology and how to get over that barrier.”* EAA1 said, *“When lecturers say, ‘my students find work online too hard’, actually their low confidence is the problem.”* Unitec has seen eLearning as an opportunity to shift their approach to a model called *the Living Curriculum*; *“With Moodle came the concept of community of practice, so there was a specific drive to change teaching pedagogy”.*

Student training in digital literacy tools

EAA1 recommended; *“Use other web-based tools; Google plus; Google docs and use Moodle as a place to consolidate”.* Digital literacy is important; *“Teachers should show students LinkedIn rather than Facebook; talk about appropriate email addresses, what sort of language or images you should use online.”* EAA1 echoed the literature review finding that eLearning can contribute to deep learning; *“ePortfolios not only show what the student’s capable of, but also add depth to their learning”* (Ruhe, 1998). EAA1 stressed the importance of collaborative learning; *“By sharing ways they will respond to situations online, students end up with increased ability to make right decisions.”*

Facebook in education

EAA1 warned; *“Facebook isn’t secure; the content’s owned by Facebook. A state tertiary education provider must meet requirements about how they communicate with students. Tertiaries may be in breach of the public information and privacy act if they try to use it.”* Students are entitled to personal online spaces; *“A student will build their personal learning environment by inviting in what they want; it’s not fair on students to use their personal space for study.”* EAA1 said, *“We direct students to private blogs which add the teacher and one other student, rather than Facebook.”* Work should be in the form of an ePortfolio, and, *“Facebook doesn’t lend itself to that very well.”*

4.5.2 EAA2; eLearning Academic Advisor 2

Impact of eLearning on student enrolments, student retention and student success

EAA2 said, *“There’s an active and on-going conversation around what is eLearning at Unitec.”* eLearning has been difficult to categorize; *“The integration of the ‘e’ and the ‘learning’ is so tight, it’s very hard to say, that is eLearning and this isn’t.”* EAA2 said, *“It’s already integrated; eLearning is just learning from my point of view”.* EAA2 defined

eLearning as, *“A continuum without a top; eLearning will evolve as technology evolves.”* EAA2 added, *“Now there are smart phones in everyone’s pocket; affordable tablets; computers all over campus.”*

EAA2 believes, *“What will hit really big is learning analytics; what pages you go to; where you hit; that will become the way we measure success; retention; engagement.”* Teachers want data, *“to tell us who is really struggling, who’s not engaging with the text.”*

EAA2 believes eLearning has helped Unitec advance its’ business goals; *“This isn’t business, this is education? I find that attitude bizarre; of course we’re a business.”* EAA2 said, *“A massive influx of business thinking would help, just as innovative thinking from the education realm helps businesses.”*

Use of LMS and the internet to improve student engagement

Concerning Moodle, *“Students need something certain; to know; ‘ok, new course, I go there, and it tells me what to do’. That’s of service.”* Moodle has been easy to use; *“If there are too many steps, it’s not all that gentle.”* EAA2 believes, *“The traditional lecture model is boring; not really useful.”* EAA2 said, *“In the same way students will not sit through a lecture or engage with Moodle if it’s dull, students will not go to an online course if it’s dull.”* EAA2 said, *“The teacher needs to make some space where students can express themselves, query and challenge. They’re not going to do that in Moodle because that’s not its role.”* It is important for tertiary students to do work at home; *“When they get to class, they’re engaged, they know the conversation; the teacher teaches to the holes in the knowledge.”*

EAA2 noted, *“If we’re training people for work, we have to assume they will work with other people; it doesn’t matter which online space you give them as long as it supports collaboration. That’s where their learning will come from; a day to day conversation in a small team of people working things out; why are we not training our students for that?”*

EAA2’s views have supported the literature review findings that collaborative learning will lead to student engagement (Ferrari, et al., 2009). *“In MOOCS, there were 160,000 studying with me, but I never really got that interesting eye contact which tells you you’re on the right track; you need that shaping.”*

Use of LMS and internet to improve teaching experience for tutors

EAA2 said Moodle is, *“A starting point; a way of interfacing students to staff; course documentation; learning outcomes; assessments; readings; YouTube clips; HTML links*

to voice threads, all straight from Moodle. Fantastic.” EAA2 noted, “Lecturers just want somewhere where students can put up their work, but an LMS can be a really interesting, engaging space if there’s content there.”

It is important to find out what industry wants, and then choose tools to fit that graduate profile; *“There’s a ‘disconnect’ between what industry thinks graduates should look like and how we teach our students.”* EAA2 said, *“There needs to be a salon at some point or there’s nothing to build their understanding on”.*

Extra staff training required

EAA2 described Moodle as, *“a simple, automated HTML editor; after a small amount of training, people can work with it”.* What has interested EAA2 is what people are doing with it; *“What’s the pedagogy? Moodle doesn’t get in the way of all that”.* EAA2 said, *“From a design point of view, it doesn’t look great, but it works.”*

Resistance to change is a persistent challenge with technology; *“Students are comfortable just inhabiting a digital world but staff still struggle.”* Resistance could be eased with discussion around pedagogy; *“If we’re going to tell staff what to do, it shouldn’t be around technology; it should be around teaching practice.”* EAA2 said, *“Don’t start with the tools; go back to what industry wants; how do we get that profile to happen and get the outcomes we want?”*

Student training in digital literacy tools

EAA2 said, *“Collaborative tools are it; ones that are focused on education.”* EAA2 explained; *“Google docs does documents really well; Dropbox for repositories and Pinterest is a great way of sharing image content.”*

Facebook in education

EAA2 said, *“Facebook has no educational value; it’s a communication tool.”* It encourages users to *“extremely like or extremely dislike; a really informed discussion about a philosophical point is not going to happen there.”* EAA2 would not like to see Facebook used as a communication tool between teachers and students; *“If staff won’t come to Moodle training, guaranteed they won’t come to Facebook training.”* However, Facebook has a place; *“There has to be a space where students can just be students.”*

4.5.3 EAA3; eLearning Academic Advisor 3

Impact of eLearning on student enrolments, student retention and student success

EAA3's research has shown that student retention and student success will improve when face-to-face learning is blended with online learning, although, *"It depends on the students; some work better on their own."* Success may, *"come down to who your students are and what you're trying to teach."*

Use of LMS and the internet to improve student engagement

EAA3 said, *"Students weren't interested in Moodle unless it was closely connected to assignments."* Lecturer confidence has been an issue; *"Many teachers aren't confident using it; it sits there as a shell."* EAA3 said, *"Teachers need to have a regular presence; if things don't change, students aren't going back."* Lack of visual appeal has affected engagement; *"Students are used to portals which are fun to look at, like Facebook; there are pictures, you don't have to read a whole bunch of text."* EAA3 pointed out, *"Even students who don't have a graphic design background are confronted all the time with slick graphic design; a typical Moodle page is a huge step back, a very uncool step."* EAA3 said, *"Internet engagement studies tell us, don't put up something where you have to scroll down; they call it the 'scroll of death'."* EAA3 warned, *"Put up things that are not easy to read and you will lose engagement."* EAA3 said blended learning is the best; *"There will always be students who are not familiar with computers; they want face-to-face; that's the way they engage."*

Use of LMS and internet to improve teaching experience for tutors

EAA3 said, *"Teachers need to design the page more attractively; upload video files to make it interesting and learn web writing."* Tutors must check every day; *"Answer forum questions or post new things; what's your time commitment?"* EAA3 warned about privacy concerns with posting work online; *"Teachers take control over your work and use it without permission; use it as a training tool for later classes; it's awful; you lose control of your work; it feels very violating."*

Extra staff training required

Fear of change could be an obstacle; *"A lot of teachers are not good at using computers; throw in an eLearning platform and they get overload."* EAA3 said, *"Early adopters figure it out first and by the time others do, the gap is huge; you end up with this digital divide within staff."* EAA3 advised, *"Look at up-skilling people en masse; say, 'by the end of the*

year, all teachers need to achieve these skills in Moodle'; set some easy targets." Moodle's simplicity may work towards overcoming resistance to change; *"If you said; 'go find your eLearning platform', how many tutors do you think would do it?"* EAA3 agreed with EAA2 on data analytics; *"The analytic side of Moodle would be useful; you can feed back into your own practice."*

Student training in digital literacy tools

EAA3 said, *"Despite Moodle's drawbacks, it's a good place to start."* EAA3 noted, *"In the past if you missed classes, you had no idea what's going on; now you can download the notes."* However, *"if they miss out on the art of note-taking, they won't process the content."* Students will create multimedia content if it is built into assignments, but, *"Why do extra stuff if you're not getting credits?"*

Facebook in education

EAA3 has doubts there is a role for Facebook in education; *"We tried setting up a Facebook page for the class and students never went on it."* Students have only liked Facebook, *"because there's no teacher there".* EAA3 said, *"Maybe teachers just shouldn't go there."*

4.6 Chapter summary

Chapter Four has described the interview findings of three focus groups involving Unitec post graduate students, CAA management and CAA staff. The findings of twelve interviews were also recorded, involving; CAA tutors; CAA students; industry representatives including a salon owner, a representative of the hairdressing association, and an elected representative of tertiary students at Unitec and finally, eLearning academic advisors who have coached lecturing staff at Unitec on incorporating eLearning in their programmes.

Overall, the idea of using the internet and an LMS has been embraced enthusiastically by CAA tutors and students. The research indicates success with Moodle at Unitec in boosting student engagement and achieving deep learning. However, some conflicting findings from FG2CAAM cast questions over the research.

Chapter Five will provide a comparative analysis of the interview findings, scanning the findings for common themes and consistent viewpoints to draw deeper conclusions.

5.0 CHAPTER FIVE – DISCUSSION AND ANALYSIS OF FINDINGS

In Chapter Four, the results of the focus groups and interviews have been described in depth and the data has been reduced into table form. The researcher has reflected upon the findings, searching for common themes, and a comparative analysis has been completed. Chapter Five describes the findings of the comparative analysis.

The implications of the interview findings have been discussed and analysed, using the principles of qualitative analysis; data reduction; reflection and theorising (Collis & Hussey, 2013). In Chapter Five, important viewpoints have been highlighted and through reflection, similarities in the viewpoints of respondents have been considered in greater depth.

The researcher has used lateral thinking to understand the value judgements made by respondents. Differences of opinion between respondents have also been highlighted and discussed. Beliefs and value judgements of respondents have been compared to relevant theory identified in the literature review. Consideration of the tone of responses has also contributed to speculation on the unspoken viewpoints of respondents, or “sub-text”.

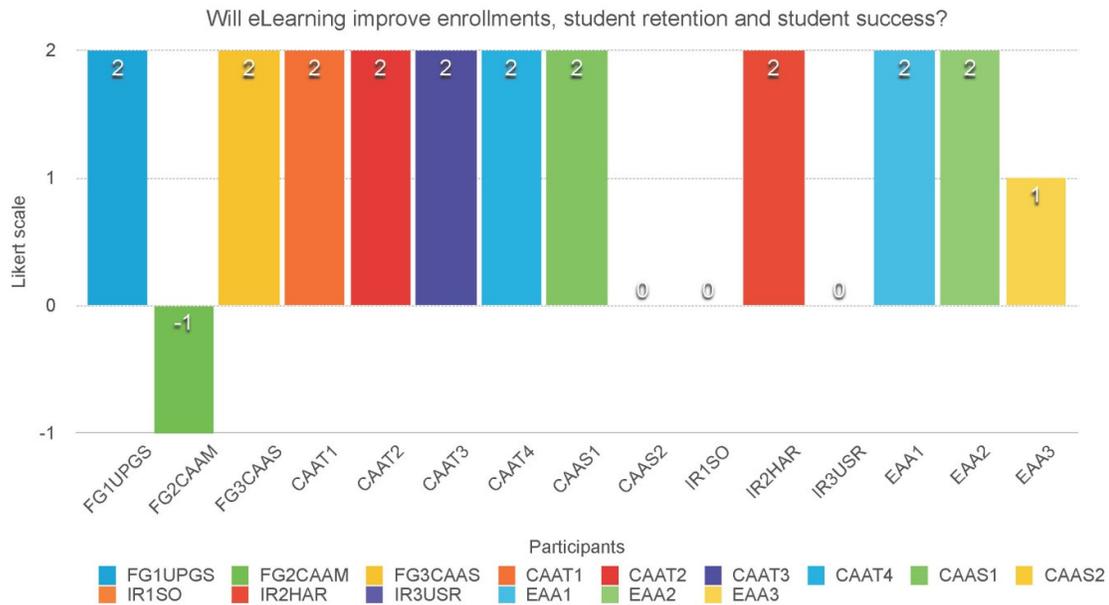
Observations have been viewed through the lens of six research questions;

- *Would eLearning improve student retention and student success?*
- *Would use of an LMS and the internet improve student engagement at CAA?*
- *Would use of an LMS and the internet improve the teaching/learning experience for tutors?*
- *Would staff require extra training to use the internet and an LMS effectively?*
- *Will there be improved student success if CAA provides training in digital literacy tools?*
- *Should Facebook play a role in the education at CAA?*

In conclusion, a final analysis of the key findings has been presented at the end of Chapter 5, which will be critical for designing a process innovation in Chapter 6.

5.1 Will eLearning improve student enrolments, student retention and student success?

Figure 4: Will eLearning improve student enrolments, student retention and student success?



Source: Developed by the researcher.

LIKERT SCALE KEY: 2 strongly agree; 1 agree; 0 no opinion; -1 disagree; -2 strongly disagree.

Figure 4 has indicated the majority of respondents believe that adopting an eLearning strategy will improve CAA's business goals of boosting student enrolments, student retention and overall student success. While a few participants have offered no opinion, only FG2CAAM disagreed that there was a connection to be drawn between technology and student success.

The research has indicated the views of FG2CAAM are not in alignment with other stakeholders. The reasons for this misalignment between organisational strategy and stakeholder expectations have been detailed extensively throughout this analysis. However, an overview of possible reasons is offered in this section.

5.1.1 Management inertia

FG2CAAM's reasons for avoiding ICT investment are many and varied. However, there are two over-riding reasons for this inertia;

- 1) Unfamiliarity with technology.
- 2) Reluctance to commit to the expense of the investment.

This reluctance to commit to the cost of an eLearning innovation stems from a subtext in FG2CAAM's comments that little value is expected from the investment. Technology has been thought of as an unnecessary "add-on" to the core business of teaching and perhaps an expensive luxury. It has not been seen as a necessity for the core business of teaching in a modern classroom.

The attitude of, "*this is the way we've always done it, so why change?*" is rooted firmly in teaching of the past, and lies at the core of FG2CAAM's resistance to change. EAA3 warns it will be the older teachers who resist change the most. This tendency to view technology as a, "*bit of a luxury*" has stemmed from the first reason given, unfamiliarity with technology; without first-hand experience of the multitude of ways in which technology can energise teaching and the learner experience, it is difficult for FG2CAAM to perceive value in the expense.

This inertia concerning technology investment has persisted for so long that the change required appears even greater, and the scale of the change required has generated fear. Without the developing familiarity with technology a gradual investment may have produced, it is difficult for FG2CAAM to have a sense of the size of the investment required.

With insufficient knowledge of technology, it is impossible for FG2CAAM to have a sense of what the implications of an eLearning strategy would be. This has led to a general fear of the unknown. Unfamiliarity with technology has induced another underlying fear; that of being left behind by others within the organisation once the technology is in place, and an inability to truly monitor the activities of teachers and students in a new space, when they may know more about technology than those attempting the monitoring.

There is a pervading fear of the unknown in FG2CAAM's subtext, which indicates a feeling there may be a resultant loss of control. Unfamiliarity with technology may account for some of FG2CAAM's apprehension. Education in the ways an eLearning program

may strengthen business goals of engagement and retention could absolve that apprehension.

The ICT infrastructure to support eLearning would require considerable investment, and FG2CAAM have been reluctant to commit to the expense unless they can recognise value in that investment. However, a lack of familiarity with technology has led to faulty judgement concerning ways in which ICT can benefit learners and teachers in the classroom.

The solution to the inertia of management is information, which will improve FG2CAAM's comprehension of how blended learning can benefit learners and the core business of CAA as a whole. This research may contribute to a greater understanding of the issues and reassure FG2CAAM of the value of that investment.

While FG2CAAM have displayed a reluctance to commit to an ICT strategy due to uncertainty about the cost, they may also be succumbing to the fear of something new or unpredictable. The fact that technology is relatively unknown to FG2CAAM results in a fear of losing control of the activities of tutors and students; that it will be somehow impossible to monitor or restrict activities should they prove undesirable to the organisation. There is an element of "Pandora's box" in FG2CAAM's fears that unknown technology will lead to unforeseen problems, and that it may prove impossible to put the genie back in the bottle once the lid has been opened on the "world wide web".

However, underlining FG2CAAM's reluctance to embrace eLearning is the belief that there would be little "bottom-line" benefit, or contribution towards CAA's business goals of improved enrolments and retention, as apparent in comments such as, "*you don't need eLearning for hairdressing.*" Without a notion of how the development can be monetised, there is an organisational inertia.

However, FG3CAAT believe an eLearning innovation would pay for itself through increased enrolments. FG3CAAT believe learners would appreciate the benefits of more classroom technology, and see it as an indicator that, "*CAA is the most advanced academy*". The inference is clear; a leader in education innovation will also be perceived as a market leader in industry knowledge. CAAT1 has reinforced this theme; "*You see an IT suite and you are clearly spending money on students*".

The dominant theme which has been echoed throughout the interviews is that technology would result in more enrolments, more student enjoyment and attendance, leading to improved student retention and more successful outcomes due to increased learning.

This student success will result in more positive promotion for CAA as graduates of greater capability enter the job market. Word-of-mouth promotion of CAA through the industry success of its graduates will lift the profile of the company and boost enrolments.

The link between student engagement and enrolments is an improved student experience; news of student success will result in more positive brand exposure for CAA, lifting the number and quality of enrolments. On the other hand, the notable absence of classroom technology has been seen as a negative by students coming from a secondary school environment where ICT is the norm. CAAT1, CAAT2, CAAT3 and CAAT4 all said, *“Students don’t understand why we don’t have the internet”*.

While there may have been genuine and compelling reasons for FG2CAAM’s reluctance to invest in technology, the failure to do so could ultimately cause long term damage, making it even harder to catch up with industry and the external business environment.

Two central assumptions have underpinned FG2CAAM’s attitude towards technology; that eLearning is not useful in a practical, applied trade and that eLearning would not generate enough return on investment to justify the cost. The inherent flaws in these two assumptions have been scrutinised more closely throughout the following analysis.

On one hand, persistence of this management inertia has stemmed from confusion around the definition of eLearning; namely, the belief that it describes online learning, or DL. On the other hand, FG2CAAM perceive technology in the classroom as an expensive luxury which will only make the teacher’s life easier, rather than part of an effective blended learning program based on management endorsed design.

Management’s buy-in is critical to the success of an eLearning venture; without that commitment to invest from management, there will be no change at CAA. Therefore, the attitudes of FG2CAAM in comparison to other stakeholders have been discussed at length throughout Chapter 5.

5.1.2 Improved student engagement

The findings of this research have reinforced the initial findings of the literature review; that increasing student engagement will lead to improved student retention and student success. The literature review has shown that creative teaching will boost student engagement, and technology has been an enabler of creative teaching (Ferrari, et al., 2009). Findings have indicated that introducing ICT in the classroom represents a

solution to the business problem of *“how to boost student engagement to improve student retention and student success”*.

FG1UPGS have explained how many aspects of creative teaching had an impact on their engagement during their papers. Lecturers used relational teaching, varying teaching strategies, multiple methods of assessment, cultural sensitivity and EI to connect with students and coax greater levels of engagement. FG1UPGS believed the greatest gains in engagement came from online activities, particularly the use of DQs in Moodle.

For FG1UPGS, the Moodle encounters were a highlight of their learning experience, confirming the literature review finding that technology is an enabler of creative teaching and can have a significant impact on student engagement (Ferrari, et al., 2009).

FG1UPGS said eLearning would improve student success, depending upon the digital skills of the learners. Making sure that learners receive training in digital literacy tools would be a wise precaution to ensure all learners engage with the online activities.

EAA2 pointed out that, *“smart phones are in everyone’s pocket and tablets are all over campus”*, suggesting that this is the way learners need to engage with their course. The other side of that coin is learning analytics, and the ability of institutions to measure success, retention and engagement. Online activities will increasingly become the way institutions reliably measure the success of their business goals as students leave digital fingerprints wherever they learn.

5.1.3 Process innovation rather than product innovation

While FG1UPGS has discussed the positive effect of online engagement, comments by FG2CAAM have reflected a low understanding of the impact of online learning on student engagement. FG2CAAM said, *“Nobody will buy it,”* even though CAA’s main competitor has recently won innovation awards for eLearning from NZAPEP (see Appendix 8.5). CAAT2 disagreed with FG2CAAM, saying, *“I’ve lost two students to Servilles because of technology,”* and CAAT1 said, *“Students will go for the technology; it will impact on their decision; absolutely.”*

FG2CAAM’s comments have shown a poor comprehension of the difference between online learning and blended learning. FG2CAAM discussed adding a new class of learners online using DL. However, EAA2 stressed that blended learning is required, saying learners need, *“that ‘haptic’ feedback”* (Magenat-Thalmann, Montagnol, Gupta,

& Volino, 2006). EAA1 agreed that, *“if there’s no face-to-face, learners need to be doing something on the job where they can apply the learning.”*

Therefore, it is unlikely that CAA could have courses which are based entirely online, although EAA2 has pondered whether a *“virtual haircut”* could be performed one day, comparing it to students at Unitec who use a virtual welder. In the industry, IR1SO has commented on how the hands-on aspect of the trade prevents online business; *“We are service based; we can’t go long distance.”* EAA1 also noted the ineffectiveness of DL, saying, *“a veterinary science student can’t study online for a year, only to find out they faint at the sight of blood and can’t handle the reality of the job.”*

Training must remain in the work environment. It is important for CAA to achieve strategic alignment with the destination industries by replicating the look and feel of work environments (Dunphy & Stace, 1990). However, some training could shift to an online space, such as 3D animation in special effects, (SFX).

The real role of the internet in hairdressing will be in staff training. IR1SO said, *“I used to see myself having a skill to offer a client; now I see it as an intellectual property which has value.”* IR1SO believes the internet may allow hairdressers to turn the tables on multi-national product companies who have previously dominated education; *“We’ve been dictated to by product companies who want to use our knowledge to make their hair product look good.”*

*The conclusion is that for CAA, eLearning will not be a **product innovation**; it will be a **process innovation**, improving delivery of the existing product line and service for customers.*

5.1.4 Blended learning

The literature review findings have indicated that blended learning would create more engagement than face-to-face teaching alone and would result in improved student success. The research findings have reinforced the literature review findings that online learning must be blended with face-to-face teaching to boost student engagement. EAA1 agreed; *“They could have conversation online, but need face-to-face; you must have collaboration, communication.”*

EAA1 has described their own research into the number of hours it took for students to learn in different groups; *“Group 1 watched live demos only; group 2 heard it face to face, with the option of seeing it repeatedly on video later”*. EAA1 said Group 2 learnt faster

and was the most successful. EAA1's research has supported the hypothesis that the use of online multimedia will boost learning and reduce the teaching hours needed.

While FG2CAAM have focussed on ways to measurably boost CAA income, such as adding a new class of DL learners, evidence has suggested ROI from a blended eLearning model may be less direct and more difficult to measure. After adopting a blended learning model, there may not be an immediate or measurable jump in student numbers, such as one would expect from adding an entire class of online learners. While there may not be an immediately quantifiable improvement in student numbers, the literature review has shown that eLearning must be viewed as a "value-add" service (Chou & Chou, 2011).

EAA1 and EAA2 have described the disruption of the education industry by MOOCs; *"People all over the world with basic access to the internet have the choice of the best education."* The answer to this global competition will be the recognition that blended learning has resulted in higher levels of student success than online learning. EAA2 said, *"What's missing online is you need someone to sum up with a depth of experience; pull thought processes into a point where it becomes real learning,"* reinforcing the literature review findings that 'deep learning' has resulted from more student engagement (Ruhe, 1998).

CAAT4 agreed that in an online environment of open education, the tacit knowledge of teachers has become the resource of value; *"What draws students to CAA is the information you give as a teacher."* FG3CAAT have agreed that eLearning will add value and return investment in the long term, by allowing CAA to remain competitive.

5.1.5 Strategic alignment with external environment

Achieving strategic fit with the external environment will require benchmarking against the education industry (Dunphy & Stace, 1988). FG2CAAM have pointed out, *"NZQA will soon require digital storage of records,"* and IR2HAR has noted that digital reporting will be required in the future.

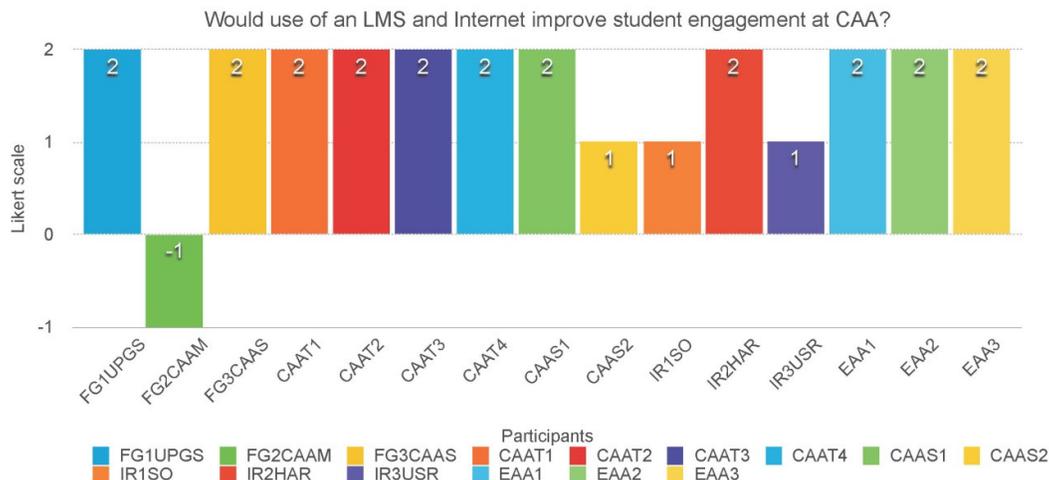
CAA may also alienate itself from students entering the education market if it does not adopt an eLearning strategy. EAA1 has described young learners; *"Primary school students get exposure to developing a digital identity; their needs will be different to students coming out of high school now."* IR2HAR has echoed this concern; *"2 year olds are using ICT at home and at school; for them, a world without ICT is incomprehensible."*

A long term eLearning strategy would have an impact on student enrolments in the future. EAA1 said, “8 year olds say they think carefully about what they write in their blogs; they have different literacy skills compared to students in the tertiary environment today.” IR2HAR said primary students are, “Blogging and vlogging, tweeting and texting; they’re used to an instant response; ‘leave a message’ doesn’t work for them”. EAA1 said, “They’re coming and we have to be ready.”

Failure to cater for the digitally ready learner of the future could cost CAA dearly with declining enrolments and disengaged learners. The price of failing to prepare for the consumer market of the future would be greater than the cost of investing in an ICT strategy today.

5.2 Would use of an LMS and internet improve student engagement at CAA?

Figure 5: Would use of an LMS and internet improve student engagement at CAA?



Source: Developed by researcher.

Likert scale; 2 strongly agree; 1 agree; 0 no opinion; -1 disagree; -2 strongly disagree.

Figure 5 has indicated that almost all participants believe the use of an LMS and the internet would improve student engagement at CAA, reinforcing the literature review findings that boosting student engagement will improve student retention and student success. However, FG2CAAM have disagreed that an LMS and the internet will impact

on student engagement. Part of the reason why FG2CAAM's views conflict with other stakeholders could be due to inexperience with technology, and therefore an inability to grasp how ICT could revolutionise learning for CAA's customers.

FG2CAAM's lack of experience with eLearning technology has brought about an inability to appreciate its advantages, which has led to antagonism towards change. Any projected gains for student engagement have been dismissed as too trivial to impact on the core business.

However, the findings from other participants have shown that other stakeholders appreciate the impact technology could have on student engagement.

5.2.1 Self-directed study

FG2CAAM have said, *"Our students won't do homework in their own time"*. However, FG3CAAT have testified that students would upload their own content and construct a personalized learning environment online. CAAT3 agreed; *"They would do homework online because it makes it more interesting for them."* CAAT4 believes students should be assigned homework; *"Tutors shouldn't provide all the information; students should go and find it."* FG3CAAT discussed the merits of putting work on Moodle; *"Students can recap at night, or if they couldn't come in that day."* EAA1 confirmed this view, saying, *"The interesting thing is, students that are sick still participate in the class with the internet."*

FG1UPGS described how one paper was more enjoyable than others due to the effective use of online discussion on Moodle. Marks were allocated to an individual essay posted online and grades were increased in proportion to interaction with other students online, measured by postings in discussion threads. The grading schedule forced students to interact online, reducing "social loafing" (Baker & Clark, 2010).

FG1UPGS reported stronger relationships and enriching learning experiences emerging from these online sessions. Intrinsic motivation was stimulated as they were compelled to interact in the online community, leading to discussions which have gone beyond that required for grades.

FG2CAAM said that CAA students, *"are not interested in networking"*. However, research has shown that "gaming generation" learners are focussed on achieving results and want to be measured (Ito, et al., 2010). EAA3 has said the answer to ensuring student engagement is tying work to assessment. Group work can be an effective method of

ensuring engagement, if marking is structured to force students to contribute without 'social loafing' (Baker & Clark, 2010). Tying interaction effectively to grades can stimulate group learning which results in networking. The literature review has showed that group work is an enabler of creative teaching which will boost engagement (Ferrari, et al., 2009).

5.2.2 Facilitation

FG2CAAM believes the use of multimedia would encourage "lazy" teaching, saying, "Teachers will put on a video and leave the classroom". However, CAAT4 said multimedia allows teachers to, "take a step back and facilitate." EAA2 agreed; "That's the smart direction; get out of the way." CAAS1 has described the excitement of writing a blog which, "hairdressers all over the world could stumble on." CAAT2 was excited about the potential of multimedia; "Just type anything and YouTube comes up with demos; I've learnt a lot from it myself." CAAT3 said technology is the answer to triggering intrinsic motivation; "If we had computers we could encourage the students to create their own work, rather than spoon-feeding them".

The literature review has indicated that being spoon-fed will disengage the modern learner and does not appeal to them (Ito, et al., 2010; Samah, Jusoff, & Silong, 2009). IR2HAR also said that students should not be "spoon-fed," and CAAT4 agreed, "It's important not to do it so they are "spoon-fed". CAAT4 believes the traditional model of the teacher as the source of knowledge is no longer relevant; "Let them do it; that's how they learn."

EAA2 reinforced that it is important to facilitate rather than dictate; "If you say, 'I'll tell you exactly what to do', students will stand back and wait for you to tell them what to do." CAAT4 said, "Take a step back, look, and help them where they are weak." EAA2 said, "Teach to the holes in the knowledge; students want to be responsible for their own learning," and CAAT4 concurred that, "They want to be hands on." All of the findings have stressed that it is important for tutors to be accessible, even in an online environment, available to provide feedback and shaping. The result would be more work for teaching staff, not less. Technology in the classroom will not make the tutor's job easier as FG2CAAM believe.

CAAT4 said, "A whiteboard is ancient." CAAT3 has described combining multimedia and practical demonstration, reinforcing the literature review finding that using a variety of teaching techniques could boost engagement (Ferrari, et al., 2009). "Looking at the

screen while listening to me verbally explain; that would make sure all their senses are engaged.”

CAAT4 described an adult learning experience during an Adult Teaching paper; *“A wine taster used the projector and samples of wine to smell and taste; I still remember it because I saw visually and then touched; it used all your senses; as an adult learner, it engaged me.”* CAAT4’s story has reinforced CAAT3’s view that a triangulation of multimedia, demonstration, sensory experience and *“student doing”* will result in, *“all the senses engaged.”*

EAA3 has echoed the literature review findings concerning deep learning; *“It’s about how deep is the processing going to be; the real deep thinking that takes time”* (McWilliam, 2007; Ruhe, 1998). FG1UPGS has reported that the DQs on Moodle allowed lecturers to identify students who were falling behind. CAAT3 concurred; *“The best thing about Moodle is the online testing and instant results; you can see who is falling behind and needs help.”*

5.2.3 Internet access

CAAT2, CAAT3 and CAAT4 all described the students’ frustration at the lack of internet access. CAAS1 concurred that, *“Most of the people I know at CAA experienced the same kind of frustration”*. CAAT4 said, *“We need internet; not just access but internet on the go so I can show them visuals, use it as a teaching tool.”* CAAT3 said, *“Get onto Moodle, get the video and bang, there it is,”* echoing CAAS1’s statement that they could, *“whip out your phone and bam, there it is,”* and CAAT2; *“You can go straight online and there it is.”* The reward of instantaneous access to information seems to be an aspect of the internet which appeals to all groups interviewed.

FG2CAAM have said that putting homework and study material online could discriminate against students who cannot afford the internet at home. CAAS1 has provided an antidote to this view; *“If they spend an hour using the WiFi at course they won’t need to worry about it.”*

FG2CAAM has discussed banning cell-phones in class, saying, *“We should be asking why is the course so boring that students have to pull out their cell phones?”* CAAS1 explained that from a student viewpoint, learners are bored because of the lack of internet, saying the *“fun stuff”* is online. CAAT4’s believes that encouraging cell-phone use could make the course more stimulating, and the literature review concurred that every switched off device is a switched off student (Brown, 2005).

5.2.4 Visual appeal

EAA2 said that Moodle, *“doesn’t look great from a design point of view.”* EAA3 agreed that Moodle is, *“visually unattractive.”* IR3USR explained that students have trouble engaging with Moodle because, *“Lecturers still use long, boring prose.”* EAA3 explained, *“Students don’t want to read down a whole list of text,”* and suggested that teachers need to change the way they write for the web; *“I will put an electronic poster up now, making it more visual; it’s got to appeal to skim readers.”*

EAA2 said, *“Capitalize on things students like, such as games.”* CAAT2 described being disillusioned with using games to spice up lessons; *“They throw it back in your face”.* EAA1 has detailed possible reasons why; *“You need to make the purpose of the game explicit; adult learners want to get what they need to know and get out.”*

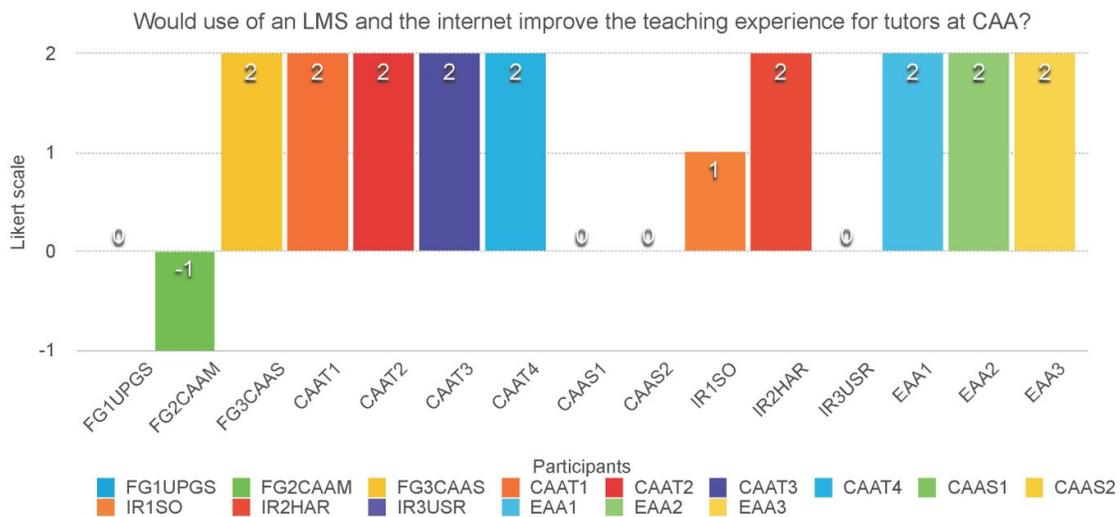
EAA3 said the most important catalyst for engagement on Moodle has been, *“definitely teacher presence.”* IR3USR concurred; *“Lecturers still don’t know how to use Moodle very well; they forget to upload stuff.”* EAA3 said, *“Students noticed a couple of teachers weren’t on it, and thought, ‘if teachers aren’t using it, why should I’? Students log in a few times, see nothing’s changed, and don’t bother anymore.”*

CAA tutors have been aware of the need for teacher presence online. CAAT 2 said, *“I would feel I have to keep putting stuff on there, otherwise they’ll think I’m slack.”* For this reason, FG2CAAM’s view that an LMS will mean less teaching time for tutors is not accurate. EAA1 says it will take more teaching time to prepare online resources and, *“PTEs don’t normally go for that”.* Decisions at PTEs are normally driven by cost factors, and the cost of teacher development time and course preparation time can be prohibitive, when hours spent in class teaching are considered the core business. FG3CAAT have certainly been concerned about whether the teacher development investment will be made, saying, *“Will we be given time to learn how to use this?”*

5.3 Would use of an LMS and the internet improve the teaching/learning experience for tutors?

Figure 6 indicates that the majority of participants believe the use of an LMS and internet would improve the teaching experience. The only participant who has disagreed is FG2CAAM, who indicated that an LMS and the internet would not be necessary for a practical course. FG2CAAM said that eLearning, “*would not be necessary for hairdressing,*” suggesting a hands-on trade could not be instructed in an online setting. However, EAA1 has indicated that applied trades at Unitec are strong online users. FG2CAAM have also suggested that projectors and Moodle would encourage lax teaching, saying, they tutors would, “*put a video on and leave the class.*” However, evidence from tutors such as CAAT3 and CAAT4 suggests an LMS would allow for more varied teaching and a more interactive experience for students, with the tutor able to facilitate more one-on-one training and spend less time “*spoon-feeding*”.

Figure 6: Would use of an LMS and internet improve the teaching experience for tutors at CAA?



Source: Developed by researcher.

(Likert scale; 2 strongly agree; 1 agree; 0 no opinion; -1 disagree; -2 strongly disagree.)

Tutors have indicated technology in class would make them feel more professional and more motivated to teach well. CAAT1 described using Moodle; “*Not only would it make you feel good; it would make you look more professional.*” CAAT2 said, “*Sometimes I think I’ve been a bit slack, not because of the way I’m teaching, but because of what I’ve*

got to teach with.” CAAT3 said teachers could upload; course outlines; assessments; tests; assignments; lesson plans; videos and all lessons in PowerPoint form. FG3CAAT said Moodle, *“makes a point of difference; CAA would be better than other schools.”*

However, FG2CAAM have doubts that eLearning would improve teaching at CAA because hairdressing is a hands-on craft which requires practical assessment. Countering that view, EAA1 explained that at Unitec, plumbing, gas-fitting and carpentry are strong Moodle users; *“You don’t expect that with applied trades; they sit down as a teaching team, design things that work for students and look at how they can do more assessments online.”* EAA1 noted, *“They were doing it on paper before; but as a teacher, you don’t want to spend all your time marking paper.”*

EAA2 added, *“The hairdressing industry is incredibly visual; you’re creating form, structure, making it happen with your hands.”* The nature of the work requires a blended learning model; *“In a video of a haircut there’s no “haptic” feedback; what did it feel like?”* EAA1 has described research which demonstrates that deep learning will be more likely to happen when learners can view a practical demo again online later.

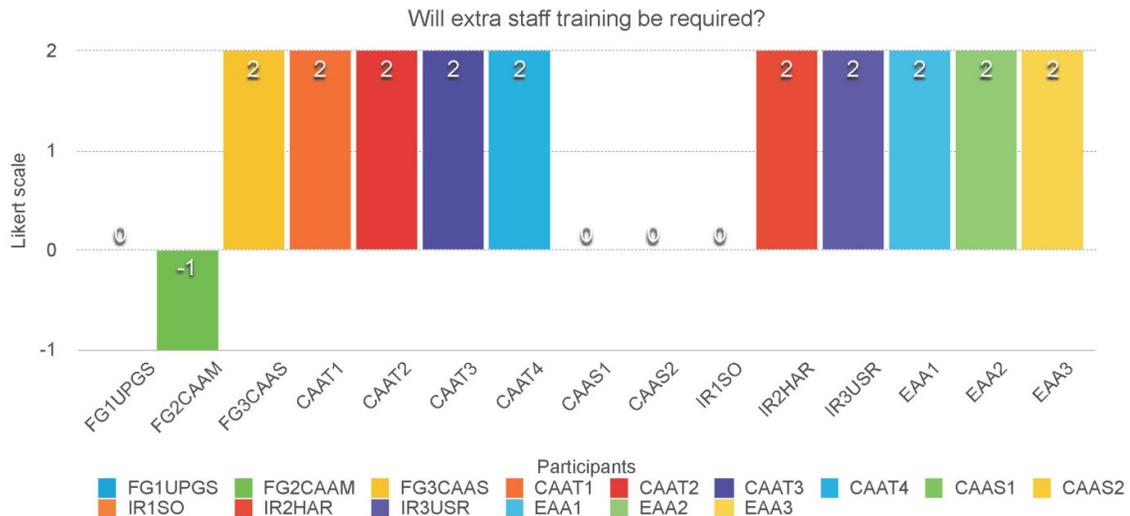
EAA1 said that eLearning, *“Takes some of the pressure of being teacher away from the teacher,”* echoing CAAT4’s comment that Moodle would allow them to, *“sit back and facilitate.”* EAA1 explained, *“It frees up the teacher to support students on an individual basis.”* EAA2 recommended that teachers should not interfere too much; *“Create the kind of digital environment where students feel encouraged to participate; the same way they feel on a Facebook page.”*

CAAT4 said, *“I bring up stuff that isn’t in the assessment criteria,”* reinforcing the literature review findings that trainers are dissatisfied with CBT and hope to give more professional development to students (Deist & Winterton, 2005). EAA3 advised, *“The content’s not going to change; the delivery is.”* Work needs to become more visual; *“The way you present content needs to change online.”*

Issues have emerged around content ownership. EAA3 has warned, *“There are some ethical issues around filming work for example; these things can end up anywhere now.”* Even temporary mediums such as Snapchat and Pinterest can present issues; *“If somebody’s saved a copy, it’s never private again; it’s become part of the public domain.”*

5.4 Would staff require extra training to use the internet and an LMS effectively?

Figure 7: Will staff require extra training to use the LMS and internet effectively?



Source: Developed by researcher.

Likert scale; 2 strongly agree; 1 agree; 0 no opinion; -1 disagree; -2 strongly disagree.

Figure 7 indicates that the majority of respondents have agreed staff will require extra training to use an LMS and the internet effectively. However, FG2CAAM has suggested they do not believe any staff training will be necessary. FG2CAAM's expectations around the use of ICT in the classroom have been built around tutors playing videos such as haircut demos, and there has been no discussion of the complexities facing tutors who will be preparing a course on a Moodle page, or managing the online interaction of students.

FG2CAAM has been dismissive of the eventual use of blended learning at CAA. They have been equally dismissive of the eventual need for staff training to support the eventual move to digital resources and an online environment, apart from the comment that, *"it sounds like lots more work for the tutors."*

Although EAA2 has described Moodle as, *"a simple, automated HTML editor,"* FG3CAAT's comments have indicated a lack of understanding of LMS and ICT and a

need for digital literacy up-skilling. Some tutors have limited computer experience, with a mixture of basic task aptitudes in Windows or Apple, while many have none.

Benchmarking against tertiary institutes such as Unitec which have already used Moodle could support effective training. The experience of eLearning academic advisors has suggested that time release is critical for serious up-take of Moodle by tutors. EAA1 said, *“Some departments were too busy “doing the do” to think about what we do; those departments haven’t progressed as well.”*

FG3CAAT’s comments have indicated that training will be required for simple tasks such as uploading files to Moodle or linking to videos on YouTube. IR3USR has mentioned that lecturers tend to use Moodle as a, *“digital drop box”*. EAA1, EAA2, EAA3, and IR3USR all agreed that lecturers need a regular presence in Moodle to engage students more. EAA3 indicated *“tutor presence”* as the most important factor in maintaining student engagement, along with tutors using *“web writing”* or *“a visual poster”*.

CAAT1, CAAT3 and CAAT4 have been passionate about gathering data online to make resources. CAAT4 has foreseen the potential in Moodle for staff training benefits; *“If resources are digital, I can give them to a new tutor so they’ll find it easier to teach”*. A repository of digital teaching resources could be invaluable when training new staff.

All of IR1SO’s photography work has been digital. To achieve strategic alignment with industry, it is important for CAA to remain consistent with technology used in the industry, such as digital editing in Photoshop (Dunphy & Stace, 1988). *Keeping pace with technology widely used in industry will be important for achieving strategic alignment between teaching practices and industry needs.*

5.4.1 Resistance to change

FG2CAAM said, *“Tutors will say, “I’ve taught this way for 30 years; why change now?”* EAA3 revealed that this attitude stems from insecurity; *“Tutors say, ‘I want to be face-to-face with my students’, but this is often a mask for a teacher’s fear of not being able to do it.”*

EAA3 agreed, *“People will say, I just want to do it the way I’ve always done it.”* There has been fear during the transition to Moodle; *“One thing teachers hate is not being confident in front of their students and that magnifies online; half their students know more about online stuff than they do.”* FG3CAAT already highlighted that, *“Students could probably teach the teachers a thing or two.”*

While there is always the possibility of resistance to change, the research findings have indicated a positive attitude from staff towards the innovation, which suggests early resistance can be overcome if the roll-out is designed in such a way that it does not alienate staff. FG3CAAT said, *“We don’t want to get a reputation as a dinosaur.”* EAA3 pointed out that although older lecturers resist change, many of them are, *“determined to crack it.”*

FG2CAAM’s comments that, *“tutors will put a video on and leave the classroom,”* have indicated a low level of trust in staff to maintain a thorough teaching experience, perhaps hinting at a “theory x” model of leadership, where initiative from staff is not expected (Morse & Lorsch, 1970). However, the research findings have indicated that rather than allowing tutors to become lazier, Moodle will require more work in preparation time. EAA1 pointed out that with Moodle, *“You are adding value, but you are also adding to the teacher’s work time.”*

An effective online presence will be vital for successful student engagement and tutors would need development time to learn how to provide that online presence. FG3CAAT has demonstrated an awareness of the cost of training, saying, *“Will CAA pay for the extra training time required to get everyone up to speed?”* EAA3 warned, *“Costs will go up for providers because of time for staff training.”* EAA1 added, *“Having the conversations amongst staff is time consuming; PTEs don’t normally go for that.”* The financial pressures facing PTEs have often demanded a high proportion of teaching time compared to staff development time. If a blended learning program is implemented, FG2CAAM may need to reconsider the ratio of teaching time to preparation time, allowing tutors space to develop a community of practice around blended learning.

Apart from staff resistance, FG2CAAM’s comments have hinted at a resistance to change within management, fuelled largely by personal lack of experience with ICT and therefore an insufficient understanding of ways in which it could add value to the course. Coupled with this inexperience is a “theory x” approach, with a low level of trust that tutors will apply themselves to their teaching duties fully (Morse & Lorsch, 1970).

Therefore, the result is management anxiety that allowing tutors to use the internet and computers will result in lost time and an abuse of the freedom the web represents. For FG2CAAM, this has translated into anxiety that there will be a resultant loss of management control of teaching activities. Combine this anxiety with a poor understanding of technology, and the result is a feeling that managers will be unable to know whether teachers are working or “playing”. This insecurity has caused for

FG2CAAM a sense that managers want to “tighten up” controls through a tighter surveillance of online activities. However, when they have no knowledge of where to look, the result is a feeling of powerlessness, which in other organisations leads to extreme solutions such as watching computer monitors or keystrokes (Marx, 1990).

FG2CAAM may have anxiety that shifting teaching activities to an online space will result in a dilution of management control. Conversely, EAA2 has suggested the best approach to eLearning would be to tell teachers to, “*do what they like,*” as long as it, “*matches their learning outcomes, graduate profile and is appropriate to industry*”, and then, “*get out of the way*”.

Findings have indicated that improving classroom technology would empower tutors to use more teaching skills in shaping course content innovatively. What must occur for an effective eLearning program to develop is for FG2CAAM to develop trust that their staff will apply themselves to their teaching role with dedication, and for FG2CAAM to allow staff the time to develop their online skills through work groups.

Recommendations for ways staff training could be implemented have been examined in Chapter 6.

5.4.2 HR impacts

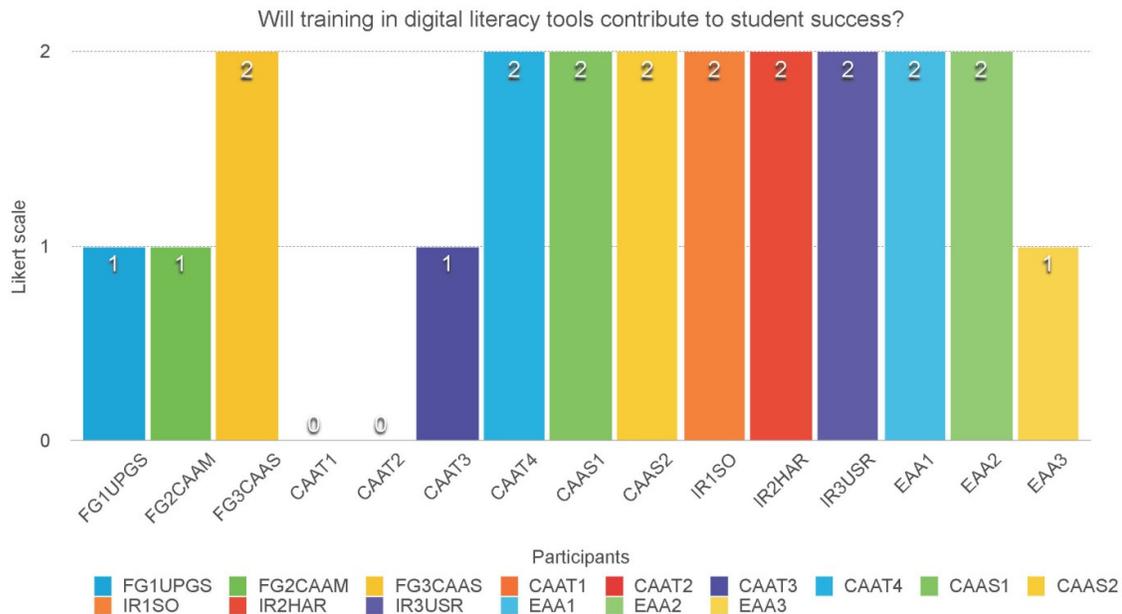
FG3CAAT have expressed concern about the security of their work on Moodle; for example, when a tutor is on leave and other teachers will need to access their page. EAA1 said “*more conversation*” will be required for the HR benefits of training and sharing resources to develop and become apparent.

For example, when students move to another class, they could take their Moodle page with them if they have already developed a personalised space, and maintain a sense of on-going community. Or alternatively, when a tutor acquires a new class they could inherit the page which belonged to a previous class at the same level of study, pre-loaded with resources and a course design. In this way, staff would be able to learn from a legacy of work left by the teachers before them, ensuring insights and a consistency of teaching practice at CAA.

CAAT4 has described other professional development opportunities with eLearning; “*Get all of the tutors working on it as a team; they could do wonders.*” EAA3 believes that early adopters should not have to carry the load; “*If I take responsibility to up-skill myself, you need to do the same; I can’t spend my time going backwards to teach you.*”

5.5 Will there be more student success if CAA provides training in digital literacy tools?

Figure 8: Will there be improved student success if CAA provides training in digital literacy tools?



Source: Developed by researcher.

(Likert scale; 2 strongly agree; 1 agree; 0 no opinion; -1 disagree; -2 strongly disagree.)

Figure 8 indicates that all of the stakeholder groups interviewed have perceived the merits of providing training to students in digital literacy tools. FG2CAAM have also indicated it would benefit students entering the workforce if they learnt more about online activities and the use of software.

CAAS1 indicated that students already know how to use computers; *“I’d call myself digitally literate; I learnt all that stuff in school,”* but added, *“It would be better if CAA provided more training on how to use computers and software.”*

5.5.1 Digital literacy

According to the literature review findings, digital literacy refers to the capability to understand critically the content of digital media (Nelson, et al., 2011). This applies to hardware and software usage, as well as an awareness of the impact of online activities.

Industry representatives have indicated they believe an important area for students' development is building on knowledge of how to shape a professional image online. IR1SO and IR2HAR said that employers want to have confidence that their staff will represent their place of work responsibly online. IR1SO said, *"The first thing we do is look them up on Facebook and find out all the reasons we would never employ them."*

EAA1 said, *"It's not a piece of paper that gets you the job; it's the networking you've done."* CAAT3 and CAAT4 have also indicated that networking online is important for job success. CAAT4 says social media is *"not about senseless chats; it's about connecting."* However, FG2CAAM have said, *"Our students would not be interested in networking,"* indicating that FG2CAAM have low expectations of their students' intrinsic motivation. Other respondents have indicated that given the opportunity, students would enjoy learning how to network professionally using other tools, such as LinkedIn. IR3USR said they have known students who *"got work because they put their photo on Twitter"*.

The findings from the industry representatives have indicated an expectation that digital literacy training would improve a graduate's adjustment to the working environment. EAA1 said that students need guidance on how to weigh information and sources online; *"As a learner, with Google it's so hard to know which resources are accurate."* IR3HAR said while digital literacy skills are not currently a job requirement, *"It will become more important in the future,"* and IR1SO said, *"If it came down to two applicants with the same skill sets,"* it could have an impact on a job application.

The research findings have also indicated that ePortfolios would have an impact on job placement. IR1SO said; *"I see that as a creative way of presenting yourself; a point of difference that makes you stand out in the market."*

5.5.2 Beyond NZQA

FG2CAAM have the view that CAA students, *“would not be interested in making their own content,”* and therefore would not be interested in learning software applications which are unnecessary for passing NZQA unit standards. On one level, EAA1 concurred, saying, *“Adult learners want to find out what they need to know and get out.”* However, FG1UPGS said some students, *“go beyond the brief,”* to pursue extra learning, in return for the intrinsic reward which comes from ‘deep learning’ (Amabile, 1998; Rock, 2008; Ruhe, 1998). This finding has challenged the view expressed by EAA3 that, *“All students want to know is what they have to do to pass the paper.”* However, EAA3 indicated that assessment can be a useful trigger for intrinsic motivation; *“If they need it for assessment they’ll pay attention.”*

The literature review findings have showed that industry relevant context can be lost in the process of CBT assessment (Deist & Winterton, 2005). CAAT4 has used material which is outside the parameters of NZQA unit standards to boost engagement; *“NZQA come up with the curriculum and we give them the information they need to pass; is that what teaching is about? How are you supposed to keep the students engaged?”*

The interview findings have supported the literature review findings that using a variety of teaching techniques will improve the learning experience for consumers of CAA’s education product (Ferrari, et al., 2009). CAAT4 said if there was Moodle, *“Students would come every day because it would be so interesting to them.”*

5.5.3 Industry ICT usage

While IR1SO observed that ICT would not replace the core activity in a hair salon, IR1SO and IR2HAR both discussed the level of reliance on computers in modern hair salons. IR2HAR described business activities consistent with IR1SO and CAAS1; *“ICT in consultation; the internet for style images; blogs; vlogs; YouTube for care between visits; digital storage of records and client communication.”*

CAAS1 has suggested a similar profile of ICT usage in the salon; iPad for client consultation; electronic booking; client records and POS. *To provide a graduate profile which aligns with industry, CAA must build learner capabilities around digital tools widely in use.* IR1SO said, *“They’re using Tumblr, Instagram, Facebook.”* IR3USR said, *“Students need to know how to use these tools once they’re in the real world.”* IR2HAR felt it will be essential for CAA to provide students with training in digital literacy tools and assist them with the creation of ePortfolios in the future.

5.5.4 BYOD

The role of cell-phones has been a cause for argument at CAA. CAAT3 said, *“All of them have iPhones; it’s a job to unglue them from their hands.”* FG2CAAM has not approved of cell phone use, and said, *“cell phones should be banned from the classroom.”*

IR2HAR has said while salon owners presently discourage the use of mobile phones, the attitude is, *“likely to change in the next generation”*. CAAT4 reflected upon a personal adult learning experience which changed their perspective; *“The lecturer said, ‘let students use their cell phones; this is advanced teaching;’ it opened my eyes.”*

More educators today recognise the potential of BYOD and are allowing students to remain connected to their devices (Ferrari, et al., 2009; Ito, et al., 2010). IR2HAR said, *“The industry still has an outmoded view of cell-phones which is probably generational.”* The literature review findings have indicated that separating “Google-generation” students from mobile phones and social networking sites can make them more “enraged” than “engaged” (Ferrari, et al., 2009).

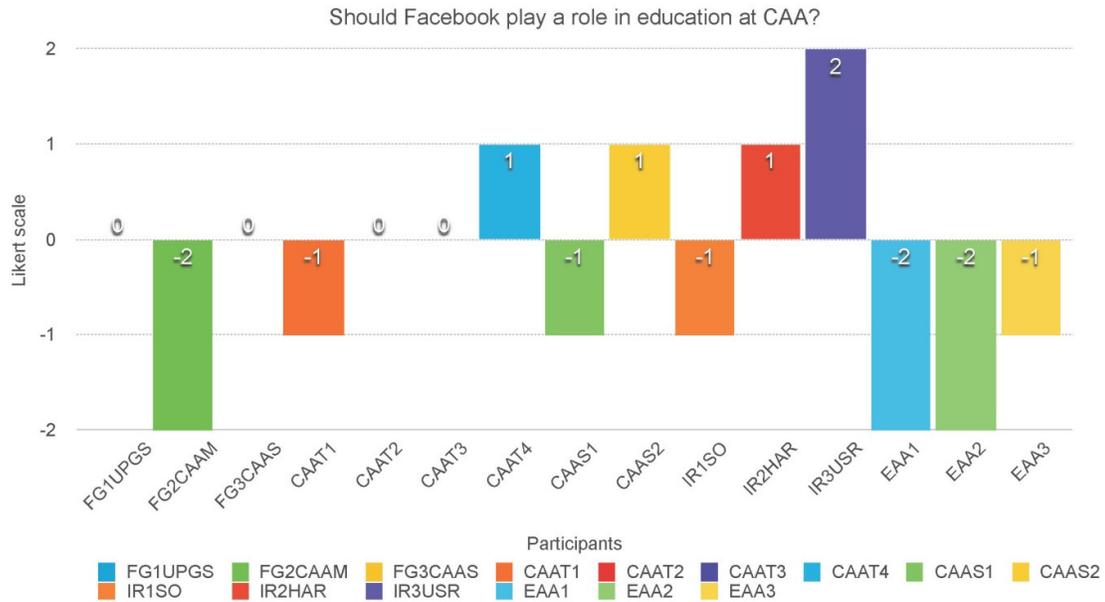
IR2HAR pointed out, *“2 year olds use ICT at home and at school; for them a world without it is incomprehensible.”* CAAT4 described primary school children today; *“Little ones are so onto it; they know how to use their phones; if they can do this in primary school, what will they be like as adults?”* For CAA to accept smart-phones as learning aids would mean a new teaching paradigm (Ferrari, et al., 2009).

The findings have indicated iPad is the device of choice in the industry. IR1SO said, *“Staff use the internet and iPad as a consultation tool,”* and CAAS1 has described a similar salon experience. CAAS2’s use of iPad in consultation has shown how effective the tool can be in industry. Despite a low level of English literacy, CAAS2 has shown a high level of digital literacy, reinforcing the literature review finding that a new definition of literacy needs to be considered in today’s digital context (Ito, et al., 2010). CAAS2 may have benefitted from extra guidance in iPad use during their time at CAA.

Overall, the findings indicate that FG2CAAM’s view that it is unnecessary for students to learn digital literacy tools is not in touch with either the needs of the current consumer market, or the external business environment. FG2CAAM’s low estimation of students’ intrinsic motivation should also be reconsidered, as today’s students have an intimate relationship with the online environment where the line between work and play is increasingly blurring (Ito, et al., 2010).

5.6 Should Facebook play a role in education at CAA?

Figure 9: Should Facebook play a role in education at CAA?



Source: Developed by researcher.

Likert scale; 2 strongly agree; 1 agree; 0 no opinion; -1 disagree; -2 strongly disagree.

Figure 9 indicates that most participants believe that Facebook does not have a valuable role to play in education. However, the research findings have indicated that Facebook may still be important as a communication medium for students. IR3USR has been perhaps the most vocal supporter of Facebook’s role as a communication medium for students. However, IR3USR has said that attempts to appropriate Facebook for educational use will fail due to lack of student buy-in.

5.6.1 An invisible marketing medium

FG2CAAM have used Facebook as a principal argument not to get the internet, saying, “*Students will be on Facebook all the time.*” While FG2CAAM have said that Facebook should be banned outright, the findings suggest it would be valuable for FG2CAAM to give more thought to the marketing value of social media.

While EAA2 has agreed with FG2CAAM that, “*Social media has no inherent educational value,*” the organisation’s digital footprint today is increasingly shaped on Facebook. It could prove prudent for CAA to develop an active participatory role in shaping that digital profile.

CAAT4 said Facebook is invaluable in the recruitment of new students, saying, *“It’s an invisible marketing medium CAA hasn’t got their head around yet.”* CAAS2 said they have posted countless images and stories of positive learning experiences at CAA on Facebook.

The research findings have indicated it may be useful for CAA to view Facebook as a powerful source of free promotional opportunities. While it could be potentially difficult to manage that message, the organisation could build some internal capabilities around managing the usage of Facebook by staff and students.

CAAT4 said Facebook is, *“not about senseless chats; it’s about connecting with people and networking.”* On the other hand, CAAT1 has described ways in which students at other schools have used Moodle’s chat feature as a replacement for Facebook. CAAT4 also believed Moodle could replace the role played by social media; *“When I saw Moodle, I thought, wow, what I’m doing on Facebook, I can do on Moodle instead.”*

EAA1 said, *“So much of learning is about conversation, so the Moodle forum is a good tool.”* However, EAA2 has doubts that Moodle could replace Facebook; *“If other tools are serving that function really well, why should we try and replicate the whole web inside one tool?”* IR3USR agreed; *“When lecturers try to initiate communication on Moodle it’s focused on measurable academic outputs; students shy away from that in favour of Facebook.”*

EAA3 described how, *“Students send some people to Moodle as ‘scouts’ to find out what’s going on and they go on to Facebook to tell everyone else.”* IR3USR concurred; *“There are students who pass their entire course without using Moodle once.”*

EAA1 has warned that PTEs using Facebook could be, *“breaching the privacy act,”* as tertiary institutions are obliged to observe government regulations about student communications. EAA3 concurred; *“Things from Facebook can be taken off; it’s now external to the institution; it becomes public.”* However, IR3USR said, *“Students are going to use Facebook for communications anyway.”*

IR1SO has had a Facebook page, and said, *“The problem online is everyone’s got a hyper-opinion of themselves; ‘come in, we’re awesome’; so is everyone else.”* EAA2 echoed IR1SO’s sentiment that, *“Facebook is designed to celebrate extremes.”* IR3USR said it will be important for educators to move students, *“away from informal communication mediums such as Facebook to more formal channels such as blogging, LinkedIn, making an ePortfolio.”* EAA2 has said the teacher needs a presence in the

communication, *“because the teacher needs to facilitate,”* and Facebook is not suitable for this kind of interaction.

EAA3 and IR3USR have said students will not use a Facebook page if it is teacher initiated. EAA2 agreed that Facebook is, *“not really the place for serious academic discussion”*. IR3USR said that efforts to appropriate Facebook for this purpose have generally back-fired; *“Teacher initiated pages are not interesting to students and do not engage them; the content is boring.”*

CAAS2’s Facebook page has contained thousands of images of their learning experience at CAA, representing a valuable source of marketing for CAA. Whether CAA embraces Facebook or not, the most visible public profile of the organisation’s activities will be the stories generated online by learners like CAAS2.

The research findings have indicated it will be vital for CAA to channel the creativity and digital literacy of students like CAAS2 away from Facebook and into professional online tools such as blogs or ePortfolios.

5.6.2 Student communication space

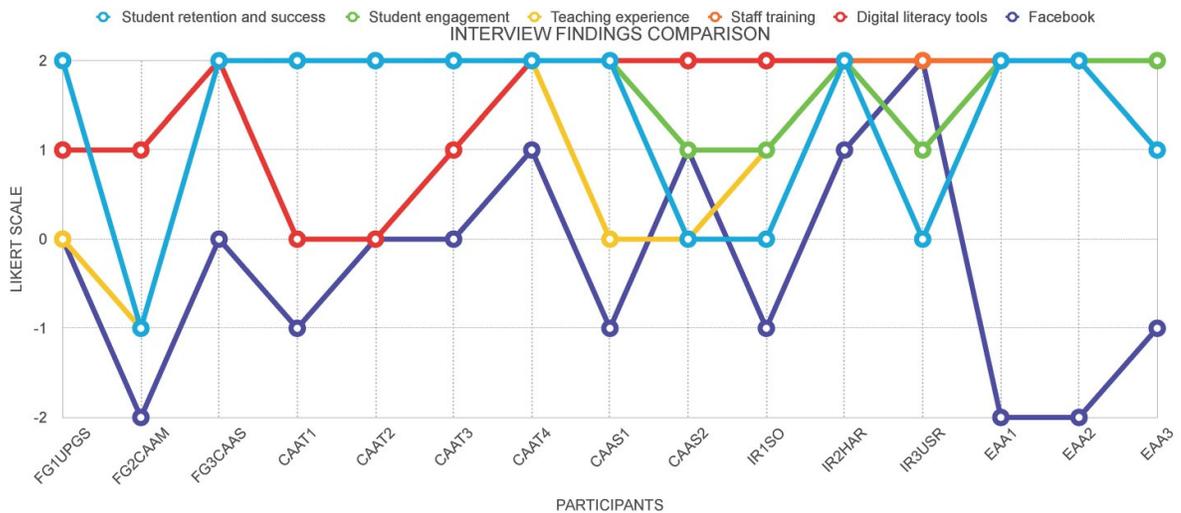
IR3USR said Facebook is an important communication medium for students; *“If students are telling you this is the communication medium they want to use, why not let them use it?”* EAA2 believed that although each class should have its own Facebook page, *“It should be generated by the class and the teacher should be nowhere near it.”* IR3USR agreed that students will not go near a Facebook page if it is teacher initiated. EAA3 said, *“Students need a space where they can just be students.”* EAA2 concurred; *“Students need to be challenging, complaining, testing somewhere without a teacher.”* EAA3 said, *“Maybe teachers just shouldn’t go there.”*

The research findings have indicated that the best course of action for CAA is to accept Facebook as an important channel for student communication, without attempting to appropriate it for academic purposes.

5.7 Summary

Figure 10 describes the interview findings for all six research questions. The majority of respondents have been in agreement on the first five research questions. However, agreement on the use of Facebook as an education tool has been less certain.

Figure 10: Interview findings comparison



Source: Developed by researcher.

Likert scale; 2 = strongly agree; 1 = agree; 0 = no opinion; -1 = disagree; -2 = strongly disagree.

What has been apparent in the final analysis of the findings is that FG2CAAM's views are generally negative towards the adoption of eLearning, and this attitude is in stark contrast to the views of other stakeholders groups. Reasons for this are many and varied. However, the primary reason would probably be a lack of understanding of the definition of eLearning.

FG2CAAM have erroneously thought the term eLearning describes online learning or DL, and therefore have assumed it will not be applicable to a hands-on trade requiring practical assessment. The suggestion that eLearning can have an impact on student engagement within the classroom through the use of an LMS, and also stimulate intrinsic motivation through online community at home, was met with disbelief from FG2CAAM, who fail to see a role for digital resources in the current course outline.

A lack of personal experience with ICT and eLearning leads FG2CAAM to leap to anecdotal conclusions about technology, and tutor use of technology, such as the belief that tutors will waste time on Facebook or use video as a way to become lazy. Some of these assumptions speak less about technology, and speak more about the way FG2CAAM view its own staff. The “theory x” manager believes that people will be dishonest unless monitored, and lack motivation (Morse & Lorsch, 1970). Many of these assumptions create a blind spot for FG2CAAM about the important dimensions of blended learning.

There is some truth to FG2CAAM’s view that online learning would not be suitable for CAA, as the findings have indicated blended learning is the best solution. EAA2 has agreed that hairdressing requires, “*haptic feedback*” which is impossible to receive from watching a demo or video. Similarly, EAA1 compared online learning in hair-dressing to a student learning veterinary science online for a year, “*Only to find they cannot handle the sight of blood*”. However, EAA2 has defined eLearning as a “*continuum without a top*”, referring to the multiple shades of gray where online learning can be blended with practical course delivery to engage learners on multiple levels.

Figure 10 indicates that FG2CAAM have disagreed with most of the research questions, while the majority of other participants are in close agreement. Reasons for this disparity have been examined at length throughout this summary.

5.7.1 Blended learning

The literature review has indicated that online learning has achieved the same level of engagement as face-to-face teaching alone. Greater gains in student engagement have occurred when face-to-face teaching has been combined with online learning. CAA will require a blended learning model which combines face-to-face delivery with online engagement, through an LMS such as Moodle.

FG2CAAM have an image of their students which is firmly rooted in a classroom model of the past; the teacher is the source of all knowledge; students have no interest in generating their own extra-curricular study, collaborating in online spaces or networking using technology. This attitude has placed CAA’s management in risk of losing touch with the market they hope to attract.

The literature review has indicated that technology has changed the way modern learners process information and communicate. The teacher-centric model of the past is no longer relevant to young learners, who feel the need to be co-creators of their learning path (Ito,

et al., 2010). The research findings have indicated there is a risk that FG2CAAM's management strategy is out of alignment with their target market in this critical area.

Similarly, FG2CAAM believed that CAA's students have no interest in homework. On the other hand, FG1UPGS noted two learning types; firstly, those who, *"only do what they need to do to get a pass"*. EAA3 echoed this view, saying, *"Students will only do what they have to do to pass the course,"* and that participation must be tied to assessment to ensure engagement of students. However, FG1UPGS also said there is another group of students, who, *"want to suck everything they can out of the paper, lecturer, or colleagues"*. The challenge for CAA will be how to add enough value to the course that they attract this type of learner who is prone to intrinsic motivation.

While FG2CAAM's expectation of students doing homework was not optimistic, CAAT3 has noted that CAA's students do complete homework when it has been assigned, and EAA3 pointed out research which has shown that today's primary school students will catch up online if they have the day off with illness.

EAA3 has been sceptical about whether learners truly want to generate their own content and raised a red flag over privacy concerns when using student material. However, CAAS2's experience has illustrated a strong student desire to build an ePortfolio of meaningful work. As CAAS2 has shown, there is a new generation of students using iPad as a learning tool and the literature review has indicated future learners will increasingly create their own content (Ito, et al., 2010).

FG2CAAM expressed concern that tutors will exploit technology to make life easier for themselves, saying, *"Tutors will put a video on and leave the classroom."* EAA1 has indicated the opposite will probably be true; *"Teachers' prep time will go up and that will mean more cost, which PTEs don't like."* However, CAA tutors have suggested that they are open to spending more of their own time on preparation and learning Moodle if, as CAAT3 said, *"It will make me a better teacher."*

The findings have indicated that CAA's teachers are focussed on self-improvement and have already spent a considerable amount of personal time generating their own resources, using the internet at home. An overwhelming finding is that the tutors at CAA want to be better teachers, which has challenged FG2CAAM's "theory x" assumption that CAA tutors will choose the easiest path when the opportunity arises.

However, a deeper analysis of the sub-text of the interviews has revealed that FG2CAAM have held up these "theory x" statements as justification for hidden reasons for their

reluctance to invest in an ICT strategy. FG2CAAM have used such statements as a red herring, rather than acknowledging a deep fear of change and a reluctance to embrace the size of the investment required to update CAA's processes. In fact, in the final analysis, it is FG2CAAM who have sought to adopt the path of least resistance.

5.7.2 Social media and digital literacy

FG2CAAM have indicated an anecdotal concern that tutors will waste time looking at Facebook; *"A tutor was caught once looking at something they weren't supposed to look at."* Management may need more education about the possible use of firewalls or passwords. Some thought may need to be given to use of an internal intranet for controlling access to certain websites.

On the other hand, the research findings have suggested rethinking the position on Facebook, as it could be an invaluable promotional tool for CAA. It is also important for CAA to participate in a brand story which is increasingly being shaped online in the social media space.

The research findings have indicated that Facebook will not be a suitable tool for education purposes. Firstly, as IR3USR and EAA3 have indicated, students tend to steer clear of Facebook pages initiated by tutors. Secondly, as EAA2 has suggested, the medium does not lend itself to finer points of academic discussion. However, building lessons about conducting appropriate online behaviour in social media into the curriculum could help shape the message which CAA's students broadcast online.

The findings have indicated students will continue to use Facebook and it is likely to remain a source of back-channelling about the learner experience. The challenge facing CAA in the future will be how to participate in this dialogue about the student experience increasingly taking shape online.

Students like CAAS2 who have generated their own digital content, have been shaping CAA's digital footprint on social media. The desire of students like CAAS2 to create their own content could be a powerful promotional tool if CAA channels that content creation into more professional platforms, such as blogs, LinkedIn and ePortfolios. Digital literacy tools training could not only benefit the students; it could also allow tutors to participate in shaping CAA's digital footprint.

In the course of future digital literacy instruction, tutors could have an opportunity to participate in the co-creation of content in personal spaces which students construct for

their own learning. In the spirit of the Maori “ako” model of learning, teachers and learners would become co-learners (Baker & Clark, 2010).

While it may never be possible to manage the back-channelling of students online, CAA could begin to take control of its own digital footprint by encouraging student discussion in academic forums, such as blogs and ePortfolios.

5.7.3 Management resistance

The research findings have indicated that FG2CAAM has no clear strategy for adopting ICT usage in the classroom. Without a coherent plan for ICT training, there will remain a persistent lack of consistency in any conversation around eLearning at CAA. However, a closer look at the sub-text of the interview has revealed deeper reasons for a reluctance to consider eLearning.

FG2CAAM has expressed a preference for computer labs. This preference has hinted at a true rationale for FG2CAAM’s reluctance to invest in ICT; expensive hardware will be situated in a single physical location which can be observed and monitored; the size of the investment will be on display, not hidden, and locating all of the technology in one room means it can be locked up if rules are not adhered to. This would place the control firmly in the hands of management, rather than teaching staff.

The idea of technology which only exists in an online space defies this logic of control, and triggers fear that access cannot be restricted. The same sub-text underlies FG2CAAM’s reluctance to invest in WiFi for students, due to the difficulties in restricting access if passwords are freely shared.

While FG2CAAM are interested in the potential of online learning for tapping into a new market and monetising the investment, the notion of ICT in the classroom has been perceived as an expensive or unnecessary “add-on” which can be postponed, rather than an essential R&D cost for surviving in the education sector.

FG2CAAM have dismissed eLearning ventures by competitors, saying, “*Nobody will buy it*”. On the other hand, FG3CAAT are afraid of being “*left behind by the competition.*” FG2CAAM’s resistance to change has stemmed from a collective unfamiliarity with the implications of the online business model in teaching pedagogy and in administration.

FG2CAAM have underestimated the impact which digital literacy tools will have on education in the future, and there is evidence of the fear of the unknown which technology represents; fear of the expense of doing business in an increasingly high tech

environment, and a fear of an inevitable loss of control of tutors' and students' activities online.

This blind spot around technology is potentially dangerous in light of CAA's need to withstand external market forces, such as; customer demands in education; the need to align with industry and competition from other tertiary providers, within and without the target industries, for student enrolments.

5.7.4 Value added service

FG2CAAM have expected a direct correlation between expenditure and ROI before opening the cheque book on ICT. However, the findings have indicated it will be difficult to quantify a direct correlation between ICT investment, blended learning, increased student numbers and student outcomes.

FG2CAAM's desire to see a direct correlation in student numbers before making the investment has originated from a poor comprehension of the role eLearning plays in the modern classroom. FG2CAAM have pictured eLearning as a new course of students studying remotely online, without face-to-face contact.

FG2CAAM's paradox is that simply adding an eLearning line through the creation of a DL course would not be practical in a hands-on trade, and adds no value for students already enrolled. This rather simplistic view of the role of eLearning in modern education has made eLearning appear unattractive to FG2CAAM, and an unnecessary addition to the core business.

The antidote for this paradox is for CAA's management to recognise the value ICT could add for currently enrolled students, by combining online learning with face-to-face teaching, as blended learning. The findings of this research have indicated that blended learning will bring the greatest gains in student engagement, student retention and student success.

Instead of a "product innovation", or a new line of education product, the addition of eLearning will represent a "process innovation," or an improvement in the current processes delivering education. It will improve service to customers, i.e., the learners, by bringing a higher quality and standard of education to the learner.

The literature review findings have indicated that online learning is a value-adding component, rather than a replacement of face to face teaching (Chou & Chou, 2011). While an investment in classroom ICT for blended learning may not directly increase

student numbers in an immediately measurable way, it would build critical organisational capabilities, such as competitiveness and immediate visual appeal to potential recruits. It would also add value for existing customers, resulting in more engaged students, more student success and more positive feedback about the organisation.

The direct ROI from blended learning through enrolments or student outcomes would be difficult to calculate precisely because, as EAA2 has said, *“it is difficult to separate the ‘e’ from the learning”*. Adding value to the existing education product through the introduction of eLearning would add to the quality and standard of education at CAA. Presumably, this would result in improved statistics in CAA’s key business areas of student engagement, student retention and student success. However, it would remain quantifiably difficult to separate which elements of statistical success may have been due to ICT investment.

Rather than seeking a direct ROI, a suitable approach to ICT investment for FG2CAAM would be to view it as an unavoidable cost of business development in the current high-tech market of education. Most large organizations absorb research and development, (R&D) costs in their budget, and regard it as a necessary cost of survival in the current business market.

Viewing ICT investment as an on-going expenditure which would be absorbed in the running expenses of the company would allow CAA to remain relevant as an education provider and maintain pace with competitors in the education market, both inside and outside the target industries.

A readjustment of management’s view towards eLearning will be required to take the necessary steps towards ICT investment which will enable CAA to remain a relevant education provider. Building HR training capabilities around ICT will also be necessary for CAA to maintain a strong teaching culture in the modern education climate.

5.8 Chapter summary

Tutors and students describe frustration at the lack of the internet and want CAA to “*join the 21st century*”. All interview respondents have said the internet and use of an LMS at CAA would boost student engagement, except FG2CAAM. Reasons for this discrepancy in the findings have been discussed at length in Chapter 5. Management have been reluctant to change without evidence of how the innovation can be monetised, and fear of the unknown could present another compelling reason for management inertia.

Rather than a source of new income, the use of eLearning would represent a process innovation, rather than a product innovation, adding value and improving the experience for existing customers. Also important is a strategic alignment with the external business environment and the target industries for graduates. The findings have indicated learners would be receptive to the change and it would lift their opinion of CAA as an education provider. The possibility of resistance to change has been discussed and potential HR impacts such as training needs. Rather than making life easier for tutors, considerable investment of time will be required. However, the findings have indicated tutors would be open to the extra effort required for training.

In Chapter Six, the final findings from the interviews will be presented and conclusions drawn. Based on the insights gained from the research, a process innovation will be designed, beginning with recommendations for a stage gate process, and a comparison of three ICT strategies.

6.0 RECOMMENDATIONS

In Chapter Five, the interview findings were analysed by comparison and reflection. The importance of blended learning has been established, adding value through a process innovation rather than a product innovation to improve the learner experience.

Without exception, all stakeholders would be excited about embracing new technology, while CAA's management have remained reluctant. Throughout the analysis, FG2CAAM's view has appeared to be in conflict with the views of other stakeholders. Reasons for this disparity have been discussed at length in Chapter Five.

In Chapter Six, the conclusions from Chapter Five have been briefly summarised. Based on the findings of the research, a stage gate process for the design of an ICT strategy has been recommended. The researcher has analysed three ICT strategies in Chapter Six and concludes with a recommendation for the most effective strategy.

6.1 Conclusions

A set of key observations have emerged from the analysis in Chapter Five.

- The literature review has indicated that online learning achieves the same level of engagement as face-to-face teaching alone. Greater gains in student engagement have occurred when face-to-face teaching has been combined with online learning. The research findings have reinforced the conclusion that CAA will require a blended learning model which combines face-to-face delivery and online engagement, utilising an LMS such as Moodle.
- Improving the classroom ICT will empower teachers to use more teaching skills to shape course content innovatively.
- Keeping pace with the technology widely used in industry will be important to achieve strategic alignment between teaching practices and industry.
- To provide a graduate profile which aligns with industry, CAA must build learner capabilities around digital tools widely in use.
- Instead of a "product innovation", or a new line of education product, the addition of eLearning will represent a "process innovation," or an improvement in the

current processes of delivering education. It will improve the service to customers by bringing a higher quality and standard of education to the learner.

- Students will continue to use Facebook and it will continue to be a source of back-channelling about the learner experience. The challenge facing CAA in the future will be how to participate in the dialogue surrounding the student experience which increasingly takes shape online.
- It may be useful for CAA to view Facebook as a powerful source of free promotional opportunities. While it may be potentially difficult to manage that message, the organisation could build some internal capabilities around managing the usage of Facebook by staff and students through education.
- While it may never be possible to manage the back-channelling of students online, CAA could begin to take control of its own digital footprint by encouraging student discussion in academic forums, such as blogs and ePortfolios.
- It will be vital for CAA to channel the creativity and digital literacy of students like CAAS2 away from Facebook and into professional online tools such as blogs or ePortfolios.
- The recommended course of action for CAA would be to accept Facebook as an important channel for student communication, without attempting to appropriate it for academic purposes.
- Educators today recognise the potential of BYOD and that separating students from mobile phones can make them more “enraged” than “engaged” (Ferrari, et al., 2009; Ito, et al., 2010). Accepting smart-phones as learning aids would mean a new teaching paradigm for CAA.
- A readjustment of management’s views towards eLearning will be required to take the necessary steps towards ICT investment which will enable CAA to remain a relevant education provider. Building HR training capabilities around ICT will also be necessary for CAA to maintain a strong teaching culture in the modern education climate.
- Despite resistance to change, particularly in older staff, analysis of the findings has yielded strong evidence that teaching staff and students would work hard to support eLearning processes because they believe it would benefit staff and students in the long run.

6.1.1 Final analysis of research questions

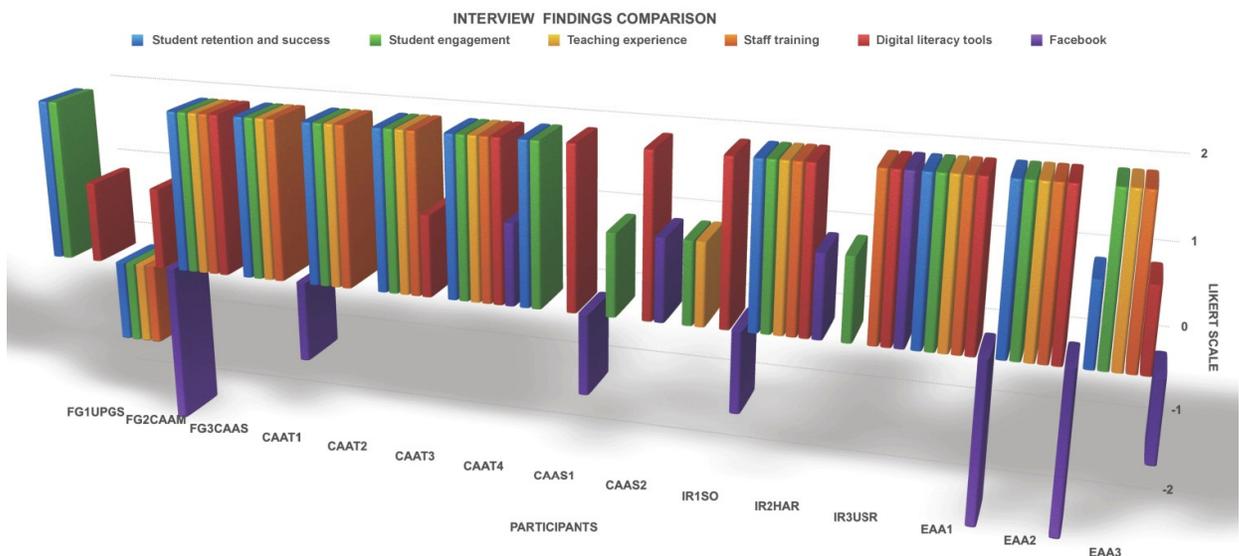
At the end of the literature review, a set of research questions had emerged which drove the interview process.

- *Would eLearning improve student retention and student success?*
- *Would use of an LMS and the internet improve student engagement at CAA?*
- *Would use of an LMS and the internet improve the teaching/learning experience for tutors?*
- *Would staff require extra training to use the internet and an LMS effectively?*
- *Will there be improved student success if CAA provides training in digital literacy tools?*
- *Should Facebook play a role in the education at CAA?*

Qualitative research has been conducted to explore the implications of these questions, and findings have been analysed in depth in Chapter Five.

Although this research has analysed these questions in depth, the research questions will remain relevant throughout an eLearning innovation. This researcher recommends that CAA continues to engage in participatory research concerning these issues throughout all junctures of the project.

Figure 11: Final comparison of research question findings



Source: Developed by researcher.

Likert scale; 2 = strongly agree; 1 = agree; 0 = no opinion; -1 = disagree; -2 = strongly disagree.

Figure 11 illustrates the findings from all interview participants for all six research questions in a bar graph form (labelling is more visible in a larger version of Figure 11 which appears in Appendix 8.8.).

In the majority, respondents have agreed or strongly agreed with questions 1, 2, 3, 4 and 5. The respondents have overwhelmingly agreed that;

- *eLearning would improve student retention and student success*
- *Use of an LMS and the internet would improve student engagement*
- *Use of an LMS and the internet would improve the teaching/learning experience for tutors*
- *Staff would require extra training to use the internet and an LMS effectively*
- *Digital literacy training would benefit students and contribute to their effective success in the work force and community.*

While the majority of the respondents have strongly agreed with the above questions, there was general disagreement for research question 6;

- *The majority of participants believe Facebook should **not** be used as an education medium.*

The research findings have indicated that the three *research objectives* have been answered in the following way;

- *The adoption of online learning and digital literacy tools would improve the learning experience at CAA and promote student success.*
- *Online learning and ICT can add value to the education model in an assessment environment based on competency based training (CBT).*
- *The use of digital literacy tools would attract more enrolments to CAA by increasing the appeal of CAA compared to other providers; more technology in class will appeal to students familiar with technology and the greater pool of recruits may mean a higher standard of learners.*

The latter research proposition of attracting a higher standard of learner to the institution may be difficult to prove categorically without further quantitative study involving the survey of recruits about previous academic achievement and reasons for selecting the course. However, the likelihood of attracting a higher standard of learner can be inferred from comments made by CAAS1 and CAAS2 that the absence of technology in the classroom at CAA can tend to discourage students who have come to rely on the use of

those technologies in other studies; students who have been high achievers or have strong intrinsic motivation may look at other disciplines which engage their senses more, or at other providers where those facilities are provided which keep them engaged mentally by stimulating more of their creative processes. The absence of technology may be enough to tip the scales in favour of one or another choice. Additionally, the literature review has provided supportive evidence that when looking for an education provider, students who are familiar with technology are more likely to choose courses with blended learning options and internet access (Van der Rhee, et al., 2007). It is important to remember the purpose of this study; that it is not designed to provide absolute “proof” of the research propositions, but rather to steer the organization in the right direction for future investment through an in-depth exploration of the emotional drivers of modern students and their learning needs.

The research findings have indicated that Moodle would be a popular platform of choice for developing eLearning competencies in the organisation, due to; its open source nature; the community of practice around its use and ease of learning.

Despite resistance to change, particularly in older staff, analysis of the findings yields strong evidence that teaching staff and students would work hard to support eLearning processes because they believe it would benefit staff and students in the long run.

Analysis of the research findings concerning the six focus questions has indicated that CAA should move forward with an eLearning strategy. The research findings have indicated that it would be a success with staff and students, who would drive the change.

The majority of respondents interviewed believe it is worth the time and effort required for CAA to develop eLearning capabilities. From the findings which have been described at length in Chapter 4 and analysed in Chapter 5, this researcher recommends that a work flow process should be designed to support an eLearning innovation.

6.1.2 Process innovation

FG2CAAM has suggested that DL could open up a completely new market. However, this qualitative research has concluded that CAA already has a defined product range, and the role of eLearning will be to improve how that product looks and feels to consumers, thereby adding value.

Rather than a product innovation, such as a new line of education product, the addition of eLearning will represent a “process innovation”; an improvement in current processes

for delivering an education product. It will improve the service to customers, i.e., the learners, by bringing a higher quality and standard of education to the learner.

The proposed process innovation will be technology driven. However, it is essential in a customer-driven innovation to always refer to the customer and their needs, such as the increased convenience which access to the internet would provide (Osterwalder, 2004).

The effective use of design thinking has been fundamental to developing innovative products, processes and services (Stamm, 2008). Design thinking is a human-centred approach to problem solving built from people, prototyping and stories; selling compelling narratives rather than concepts (Elizondo, 2010). Design thinking has allowed managers to avoid the business plan approach to a project by sketching out goals and ambitions before the project is initiated. A popular view is that business leaders should not just think like designers, they should become designers (Osterwalder & Pigneur, 2010).

The interview findings in this research could inform a rejuvenated “customer focus” at CAA, one of four principle criteria of design thinking which include; experimentation; prototyping and emotional connectedness (Stamm, 2008). The research findings have indicated that ICT will present challenges to staff and management at CAA and these challenges can be eased through the experimentation and prototyping phase. The final look and feel of the prototypes must be carefully managed to appeal to users, therefore minimising resistance to change.

In keeping with innovation theory, EAA1 has recommended that CAA performs a, “*post-implementation review*,” to ascertain success of the pilot study (Cooper & Kleinschmidt, 2001).

6.1.3 The stage gate process

A stage gate process can streamline the work flow along key junctures where evaluation takes place (Stamm, 2008). Stage gate processes have been commonplace in most organisations, which usually have some system for collecting and managing ideas. The process innovation can be reassessed and evaluated through consultation at each critical junction (Cooper & Kleinschmidt, 2001).

In a stage gate process, the project is reviewed at certain points in development and a “no/go” decision made. It is especially important to pay attention to the early stages, such as background research. The research in this study has followed recommendations for a *development funnel* (Osterwalder & Pigneur, 2010). Firstly, for capabilities assessment

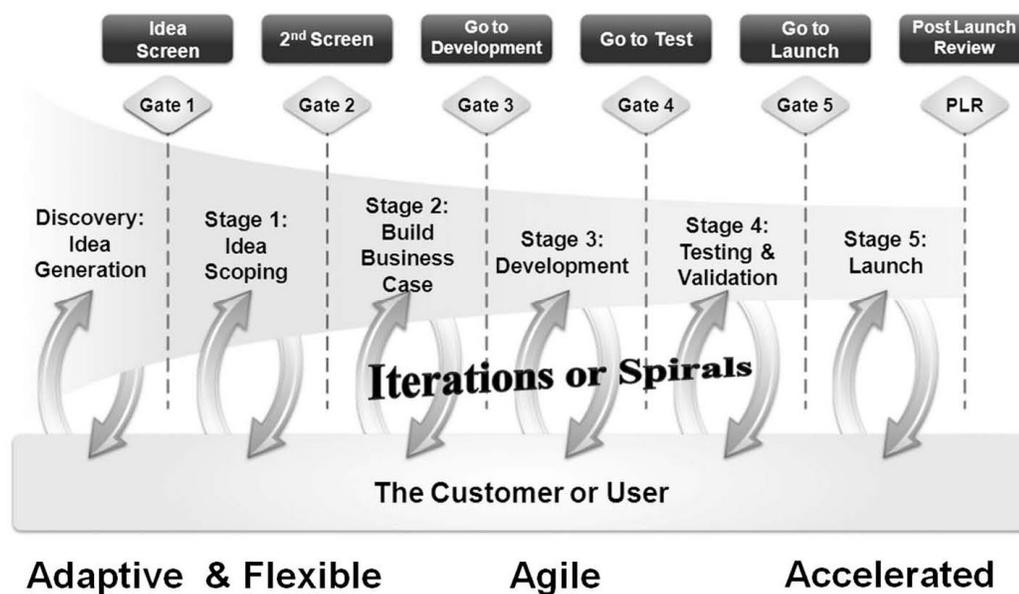
and forecasting, this researcher has undertaken an analysis of CAA's future product/service capacity, including investigating the efficiency of current processes and reviewing technologies. A market assessment has then analysed existing clients to identify needs and areas for improvement, as well as analysing competitors to identify areas for expansion.

Rather than a replacement for the development funnel, the stage gate process is a tool during the project management and execution phase yet to unfold (Stamm, 2008). The stage-gate process lays out key phases in the project which involve challenges that become the focal points of the project. At these focal points, progress will be assessed and further recommendations made based on information gathered through consultation.

The key challenges for CAA have been identified in the analysis of research findings as; viability; technology decisions; training; retooling resources and record keeping.

Figure 12 illustrates the flexibility built into the stage gate process, with reflection spirals at each gate. Rather than rigid gates, organisations have often spoke about the stage gates as guidelines which are not applied rigidly. In the four 'f's of the stage gate process, gates have been adaptable, with fluid stages and flexible "fuzzy gates", rather than a rigid stage-and-gate system (Cooper & Kleinschmidt, 2001).

Figure 12: The next generation idea-to-launch system.



Source: Applebaum, Habashy, Malo & Shafiq (2012, p. 750).

It will be important to continually re-assess and adjust the development process to reflect the latest insights (Stamm, 2008).

Typically, Stage Gate 1 will involve the first decision to commit resources. The development of qualitative themes in this research have been in keeping with the usual qualitative criteria for Stage Gate 1; strategic alignment; technical feasibility; competitive advantage and looking at “musts” (Stamm, 2008).

Stage Gate 2 typically involves market research. In CAA’s case, staff and students have been interviewed for this study.

Stage Gate 3 will often focus on a lab tested prototype with an emphasis on technical work. A Moodle pilot site has been created for CAA by the researcher in a community of practice collaboration with TPA at Unitec.

Stage Gate 4 usually involves testing and validating the product itself, such as through in-house product tests or user field trials. For CAA, this testing phase will be incorporated in developing resources for digital teaching and exploring the affordances of Moodle.

The analysis of findings in this thesis has resulted in the design of a stage gate process which is unique to CAA’s innovation needs. Each stage gate has been framed around an over-arching question, which will drive revised research questions for the next phase of participatory research;

- *Stage Gate 1:* Will eLearning innovation improve teaching and learning at CAA?
- *Stage Gate 2:* What ICT infrastructure solutions will be required?
- *Stage Gate 3:* How can CAA train staff in new digital literacy competencies?
- *Stage Gate 4:* How will CAA develop digital teaching resources?
- *Stage Gate 5:* How can CAA satisfy the record keeping demands of stakeholders, such as NZQA; TEC and HITO?

Staff training in Stage Gate 3 will flow from analysis of ICT infrastructure needs assessed during Stage Gate 2. Similarly, Stage Gate 4, curriculum redesign, will flow on from decisions made during Stage Gate 2. The development of resources in Stage Gate 4 could be folded into the training processes in Stage Gate 3, reinforcing the “fuzzy” gates and reiterative spirals in Figure 12 (Appelbaum, et al., 2012).

6.1.4 Industry preferred metrics

The innovation workflow has been assessed using the following industry preferred metrics (Elizondo, 2010).

Differentiability; CAA will not be the first hairdressing academy in New Zealand to adopt an eLearning program, with competitors at Servilles Academy already offering eLearning (see Appendix 8.5). However, eLearning is still an emerging innovation in the hairdressing training industry. An eLearning strategy will not represent a new product for CAA and could be regarded as incremental. However, an ICT innovation will require a massive overhaul of systems and represents a radical innovation for CAA (Chou & Chou, 2011).

Creativity; the way CAA organises the innovation, such as appointing change leaders and designating workgroups, could require extensive consultation between management and staff, therefore requiring a shift to organisational learning, (OL) strategies (Waddell, et al., 2013). Success will depend not upon digital tools, but the creativity applied to impart inspiration to learners' minds (Ferrari, et al., 2009).

Probability of adoption; more PTEs will develop eLearning strategies in the future and it is only a matter of time before CAA experiences pressure to modernise from; teachers; students; competition; industry; shareholders and investors.

Need satisfaction; the research findings have indicated an eLearning strategy could satisfy CAA's business goals by stimulating higher levels of student engagement, which will lead to greater student retention and student success. It can add value to the education experience for students and positive customer feedback will lead to more enrolments. Efficiencies from going digital will mean improved knowledge management, (KM) which will allow CAA to increase organizational effectiveness (Tikhomirov, et al., 2010).

Performance of prototype; a functional Moodle pilot site has been created in partnership with Unitec's Te Puna Ako, (TPA) showcasing a week of lessons for a 2nd year hairdressing class, including; timetables; cutting videos; lesson plans; YouTube videos; product knowledge; online assessment examples and online surveys. The working Moodle pilot has been used to demonstrate the functions of Moodle to FG2CAAM and FG3CAAT. The Moodle pilot site could be used to reduce resistance to change from a lack of ICT knowledge in management, and has been designed to be emotionally appealing to end users, the tutors and students (Stamm, 2008).

Social and environmental considerations; tertiary institutions have been major developers of the knowledge society and prepare learners for a world where ICT demands innovative thinking (Tikhomirov, et al., 2010). An education in digital literacy will enable students to be empowered and technically competent members of the workforce who can benefit society (Ferrari, et al., 2009). Carbon footprint reductions at CAA can also be gained by eliminating paper consumption.

6.2 Stage gate 1 - Viability

Before the first decision to invest resources, Stage Gate 1 is;

- *“Will an eLearning innovation improve teaching and learning at CAA?”*

This question has been answered substantially in the analysis of findings in Chapter 5; the majority of stakeholders strongly agree with Questions 1, 2, 3, 4 and 5;

- *eLearning would improve student retention and student success*
- *Use of an LMS and the internet would improve student engagement*
- *Use of an LMS and the internet would improve the teaching/learning experience for tutors*
- *Staff would require extra training to use the internet and an LMS effectively*
- *Digital literacy training would benefit students and contribute to their effective success in the work force and community.*

The literature review findings have indicated that CAA should teach competencies beyond those required by NZQA unit standards if the organisation hopes to remain a viable competitor and leader in the education market.

Findings for research question 6 have indicated that Facebook should not be used as a learning medium. Although questions remain around its role as a communication or marketing medium, this issue would be best left for Stage Gate 2. Regarding research question 4, the issue of staff training should be left for Stage Gate 3.

Following the analysis of findings, the researcher is satisfied that the Stage Gate 1 question of, *“Will an eLearning innovation improve teaching and learning at CAA?”* has been answered satisfactorily and OD should proceed around the launch of an eLearning innovation at CAA.

Solutions exist for the launch of an ICT strategy which will minimize the risk of investment and reduce resistance to change. EAA1 has recommended running trials to ascertain success and stumbling blocks. One recommended strategy would be to implement a *pilot study*, equipping one class with the internet; a projector; a laptop for tutor use and WiFi access for students. In this way, student engagement studies could be performed before rolling out ICT infrastructure across CAA.

Before any ICT strategy can begin, an analysis of technology should be conducted. This researcher has performed an analysis of Stage Gate 2 considerations in the following section.

6.3 Stage gate 2 – ICT requirements

Analysis of the research findings has signalled a move to Stage Gate 2;

- *What ICT infrastructure and solutions will be required?*

Stamm (2008) has described Stage Gate 2 as a critical “homework” stage involving concept testing, technical appraisal and detailed financial analysis, which is often neglected by organisations. This section has focussed extensively on the financial analysis of ICT strategies for CAA.

CAA will need to carefully analyse which ICT infrastructure would be required to support an eLearning innovation. Stage Gate 2 will be defined by extensive consultation with staff and students to establish teaching/learning requirements and inform any future ICT decisions.

The findings of this research have revealed important advice to CAA from eLearning Academic Advisors. EAA1 recommended;

- *Don't buy anything*; ideas will change through use.
- *Ask your students*; what do they want?
- *Run trials*; ascertain student feedback.

EAA2 warned, “*It's important to stay flexible*”. Ideas will change quickly because, “*It doesn't work as well as you want, or staff members will want to do it another way or students will demand different things.*” EAA2 has reinforced the need to run pilot studies so that OL processes can occur.

Analysis of the findings has indicated a willingness on the part of tutors to adopt Moodle. FG3CAAT believed Moodle would be a suitable medium for delivering content to students, inside and outside the classroom. The findings have indicated that having an LMS used consistently across the Academy would be the best way to support effective training programmes.

6.3.1 Advantages of Moodle

Moodle is open source and does not require a licensing fee, which should ease FG2CAAM's concerns around the cost of an ICT investment. FG3CAAT has said the usefulness of Moodle would far outweigh the cost of setting up the ICT infrastructure to support internet connectivity.

There may also be an advantage in benchmarking against Unitec's extensive experience with Moodle. This research has collected an abundance of useful advice from eLearning Academic Advisors at Unitec who are experienced at supporting lecturers to use Moodle effectively. EAA1 pointed out, "*a community of practice is a great way to learn and grow,*" and suggested that CAA could partner with Unitec's TPA.

FG3CAAT have recognised that the use of an LMS would enhance the classroom experience for learners and add value to the product. FG3CAAT have described the advantages of Moodle as;

- *Flexibility*; record keeping, reporting and back-up of records
- *Slideshows*; PowerPoint delivery in class
- *Built in surveys*; teachers get instant feedback
- *Assignments online*; students get instant feedback
- *Credit tracking*; students can measure their own progress
- *Calendar*; important dates, upcoming events
- *Less paper*; less time cueing at the photocopier.

Tutors could build class lessons on their Moodle page and deliver content from it during class, using a projector plugged into a laptop with the internet. The lesson could be supplemented with video, audio or links to websites. With WiFi access, learners could access the Moodle page during lessons to download readings or PowerPoint slides. Students could complete assignments online using their own devices during class or work at home online after hours. They could access Moodle to; revise material; view website links provided by the tutor; review demo videos or YouTube content and compile their own ePortfolios.

Students could photograph their own work or industry events and share it to generate meaningful collective experiences (Soccio, 2012). They may produce their own videos or narratives and upload them to the 'chat forum' in Moodle.

Use of Moodle would provide an interactive lesson, which is crucial for stimulating a learner's intrinsic motivation and deep learning (Rock, 2008; Ruhe, 1998).

6.3.2 Computer labs

For FG2CAAM, investing in a computer lab may appear to be attractive in the short term. However, hardware quickly devalues, and the inconvenience of moving a full class of students from one room to another could eventually prevent buy-in from staff, with the likely outcome for students being that the eLearning experience remains limited to assignments or tests.

Investing training time in software solutions could offer more long-term flexibility than investing in hardware, particularly if solutions exist virtually in an online space, rather than located on physical devices. The increasing popularity of Cloud technology testifies to the attractiveness and convenience of internet-based business solutions.

The research findings have indicated that end users believe computer labs are old-fashioned and there is a preference for BYOD. However, investment in ICT infrastructure would be needed for all students to connect to the internet using their own devices. Tutors already own digital devices which are personalized to suit. The findings have indicated tutors would prefer BYOD to the use of unfamiliar devices with unfamiliar applications. Discouraging tutors from BYOD would be a wasted opportunity, considering it could save CAA the cost of purchasing hardware.

6.3.3 Tools

FG2CAAM have suggested using ebooks as a new teaching resource. However, the findings have indicated textbooks should be avoided, and resources developed by tutors would be a more effective method of engaging students. The research findings have indicated successful eLearning is not a matter of which tools are used, but the creativity that educators employ when designing effective methods of encouraging engagement with content (Ferrari, et al., 2009). Either way, tutors will need to be trained to design effective online engagement and tie it to assessment.

It is important for eLearning solutions to be part of the overall conversation around teaching and learning.

EAA3 has recommended that before asking which tools to use, it is important to listen to industry's preferred graduate profile; *“What does industry want? To get that graduate profile we have to ask how to assess for those learning outcomes; before that, we need to talk about how we teach; before that is where eLearning as a tool comes into the conversation.”*

The most effective tool for overcoming resistance to change is simplicity. EAA3 said, *“If they have to log onto one website for a paper, and another one for a different paper, they're never going to learn it.”* EAA2 concurred; *“If there are too many steps, it's not that gentle.”*

Moodle would be a good starting point on the continuum of eLearning and could act as a mesh for a suite of eLearning solutions. EAA2 has recommended, *“constantly look for collaborative tools; from pedestrian tools like Dropbox to Google tools which allow multi-users to collaborate.”*

6.3.4 ICT strategy options

When approaching strategy from a design point of view, it will be important to create as many models as possible and test the models (Osterwalder, 2004). For Stage Gate 2, CAA will need to make decisions around what kind of ICT infrastructure will be required to support Moodle as a teaching delivery platform. Consultation with ICT professionals will be required for clarity around the options. However, to assist with planning, this researcher has conducted a preliminary investigation and formed recommendations.

The findings of this research have indicated that Moodle would be a useful starting point for an eLearning model. While Moodle would facilitate delivery of content, CAA could acquire further competencies in applications for content creation; packages such as Adobe eLearning Suite offer a range of solutions. Trials of software solutions should begin during the pilot study phase, and experimentation with blog sites such as Wordpress or ePortfolio tools such as Mahara is recommended.

Exploratory research has been conducted to highlight the comparative costs and benefits of three alternative ICT strategies. Unlike a new product launch, where sales may be difficult to project, CAA has an established sales record of approximately 650 learners per annum. Therefore, the purpose of this analysis is not to predict which ICT strategy would generate the most ROI; rather it will be to evaluate which strategy would add the most value to an education product which is already provided to learners.

Itemised costs have been provided to give an approximate value of the investment required for each plan (figures provided are for illustration purposes only). Variation could occur due to the need for ICT consultation for some aspects and the rapid rate of change in technology. Due to the need for tailored solutions, this cost exercise does not include; the provision of internet by a service provider; cloud options and business solutions. As open source software, Moodle is free. However, an ICT consultant may be required to install it on CAA's server.

Estimates for setting up the wireless infrastructure have come from Herman Engelbrecht of Future PC and are not quotes. Technicians would require access to the site for factors such as; the impact of the building, spaces and structure on WiFi capability; installation of a proxy server; number of access points needed; content filtering and video-capable speeds (see Appendix 8.6). If WiFi is to be installed, Ethernet cables to each classroom might still be required, as wireless can cause video lag. Pieter van Ham of Audio General has been consulted concerning projectors, and consideration has been given to issues such as the brightness/contrast needs in a classroom with lights, bulb life and HDMI connectivity to a range of devices.

Estimates have been based on 35 classrooms with a projector in each room, and a laptop connected to each projector for tutor use only.

6.3.5 ICT Strategy 1

Table 8: ICT Strategy 1; teacher connectivity only.

Item	Description	Cost
Projectors	BenQ MZ660P; (source; Audio General, US)	\$475.00 US x 35 units (incl. shipping \$1294.00 US; currency converted) NZ \$25,549.00
Laptops	Dell Vostro 3550; (source; Dell website)	\$974.00 x 35 units \$34,090.00
Ethernet	Ethernet cables for 35 classrooms, parts and labour; (source; Herman Engelbrecht, Future PC)	\$4893.75
Internet connection	Arranged with internet provider	Unknown
Moodle installation	IT professional	Unknown
COMPUTER LAB	? x PCS	Unknown
		Total cost; \$64,532.75

Source: Developed by researcher.

FG2CAAM had concerns about the cost of WiFi access for all students. Therefore, ICT Strategy 1 has provided internet access to teachers only, using fixed Ethernet cable rather than WiFi, with one laptop in each classroom connected to a projector. There

would be no WiFi in class. However, Moodle would be available to students at home through home internet. FG2CAAM has preferred the option of a computer lab for student use. While this may be an additional cost to take into consideration, the cost of a computer lab has not been included in this model.

6.3.6 ICT Strategy 2

Item	Description	Cost
Projectors	BenQ MZ660P; (source; Audio General, US)	\$475.00 US x 35 units (incl. shipping \$1294.00 US; currency converted) NZ \$25,549.00
Laptops	Dell Vostro 3550; (source; Dell website)	\$974.00 x 35 units \$34,090.00
Wireless connectivity (WiFi)	6 WiFi nodes; 3 bldngs inner city (source; Herman Engelbrecht, Future PC)	\$6637.00
Internet connection	Arranged with internet provider	Unknown
Moodle installation	IT professional	Unknown
		Total cost; \$66,276.00

Source: Developed by researcher.

ICT Strategy 2 has included projectors and laptops for each class from ICT Strategy 1, but has added the cost of WiFi connectivity for all students. The bandwidth required to support approximately 650 students would need to be considered. Future PC has indicated that wireless specifications are subject to change, depending on the physical structure, building layout and number of nodes required. A computer lab could still be an option, but would not be necessary if students BYOD.

6.3.7 ICT Strategy 3

Item	Description	Cost
LCD HDTV (1080)	Sony Bravia 46" HD LCD KDL46EX520; (source; Rob Davenport, Commercial Account Manager at JB Hifi)	\$1049.00 x 35 \$36,715.00
Ipad	16GB; WiFi only JB Hifi	\$557.00 x 35 \$19,495.00
Apple TV	Sync iPad screen to TV	\$149.50 x 35 \$5232.50
Wireless connectivity (WiFi)	6 WiFi nodes; 3 bldngs inner city (source; Herman Engelbrecht, Future PC)	\$6637.00
Internet connection	Arranged with internet provider	Unknown
Moodle installation	IT professional	Unknown
		Total; \$68,079.50

Source: Developed by researcher.

In ICT Strategy 3, the assumptions of strategies 1 and 2 have been rejected. Instead of projectors, ICT Strategy 3 places 1080 resolution liquid crystal display, (LCD), high definition television, (HDTV) into the classrooms. Instead of laptops for tutors, iPads would be provided. Apple TV would be connected to each HDTV, so tutors could sync their iPad screens to the HDTV, with no wires.

6.3.8 Analysis of ICT strategies

Table 11: Itemised pricing plan for three ICT strategies.

PRICING PLANS

PRICING PLAN 1

Technology required	Cost per unit	Cost x35
Projectors BenQ MZ660P	\$475.00	\$25549.00
Laptops; Dell Vostro 3550	\$974.00	\$34090.00
Ethernet cables; installation 35 classrooms		\$4893.75
Internet connection p.a.		
	TOTAL	\$64,532.00

PRICING PLAN 2

Technology required	Cost per unit	Cost x35
Projectors BenQ MZ660P	\$475.00	\$25549.00
Laptops; Dell Vostro 3550	\$974.00	\$34090.00
Wireless network installation		\$6637.00
Internet connection p.a.		
	TOTAL	\$66,276.00

PRICING PLAN 3

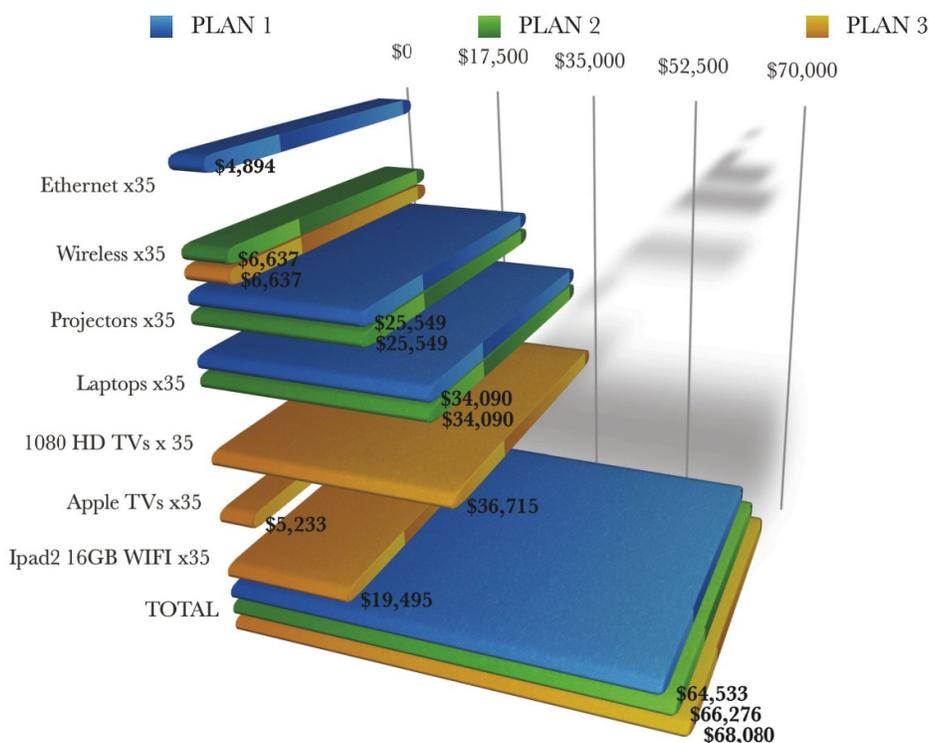
Technology required	Cost per unit	Cost x35
1080 TVs; Sony Bravia 46" HD LED LCD TV	\$1049.00	\$36715.00
Ipad2 16GB WIFI	\$557.00	\$19495.00
Wireless network installation		\$6637.00
Apple TV	\$149.50	\$5232.50
Internet account p.a.		
	TOTAL	\$68,079.50

Source: Developed by researcher.

ICT Strategy 1; class lessons would be energised by access to the internet on the big screen and the use of Moodle to embed audio-visual. However, *ICT Strategy 1* has provided no WiFi connectivity for students. The eLearning strategy would be unlikely to succeed, due to a lack of buy-in from students and staff. Students would be unlikely to connect to Moodle at home if they have had no Moodle training during course hours. The cost of *ICT Strategy 1* is not much less than *ICT Strategy 2*, which offers greater value with WiFi connectivity for students. A computer lab would also be necessary in this plan, an additional cost which is not required in *ICT Strategy 2* and *ICT Strategy 3*. Tutor adoption would be lukewarm if students must move to another room to use a computer lab.

ICT Strategy 2; costs not much more than *ICT Strategy 1*. However, the addition of WiFi connectivity in *ICT Strategy 2* would guarantee buy-in from staff and students. The cost of WiFi installation for the entire school would be only a fraction more than the cost of Ethernet cable in plan 1, yet adds considerably more value.

Figure 13: Cost comparison of 3 ICT strategies



Source: Developed by researcher.

ICT Strategy 3; ICT Strategy 3 has described a completely different look and feel to traditional classroom technology. The tutor could experience the portability of an iPad instead of a laptop and the LCD-HDTV would look more modern to students. Effortless syncing of the iPad screen to the LCD-HDTV via Apple TV would make the demonstration more fluid and the teaching experience more organic for the tutor. The student impression would be that CAA has become a forward-looking organisation.

Figure 13 has illustrated how minimal the cost difference is between the three strategies, and yet they offer vastly different value. Strategy 1 offers little value beyond improving classroom demonstration, yet student and tutor buy-in to eLearning would be doubtful. Strategy 2 offers considerable more value, but Strategy 3 increases the value added dramatically, for only a fraction more cost.

Table 12: Cost of eLearning innovation; per student.

COST PER STUDENT

PLAN	TOTAL COST	COST PER STUDENT: 1 YEAR	COST PER STUDENT: 5 YEARS
PLAN 1	\$64533.00	\$99.28	\$19.85
PLAN 2	\$66276.00	\$101.96	\$20.39
PLAN 3	\$68080.00	\$104.73	\$20.94

Source: Developed by researcher.

Table 12 has compared the cost of each ICT strategy to the relative number of students. To completely recover the investment in one year, the cost of ICT Strategy 2 per student would be \$101.96, whereas ICT Strategy 3 would be \$104.73 per student. The greater added value of state of the art touch screen tablets LCD-HDTVs could be obtained for an investment of only \$3 more, per student.

When spreading the investment over a 5 year period, ICT Strategy 2 would cost \$20.39 per student and ICT Strategy 3 would cost \$20.94 per student. The difference between a traditional classroom approach to ICT with projectors, and the more modern, stylish look provided by LCD-HDTV and iPad, is less than a dollar per student over 5 years.

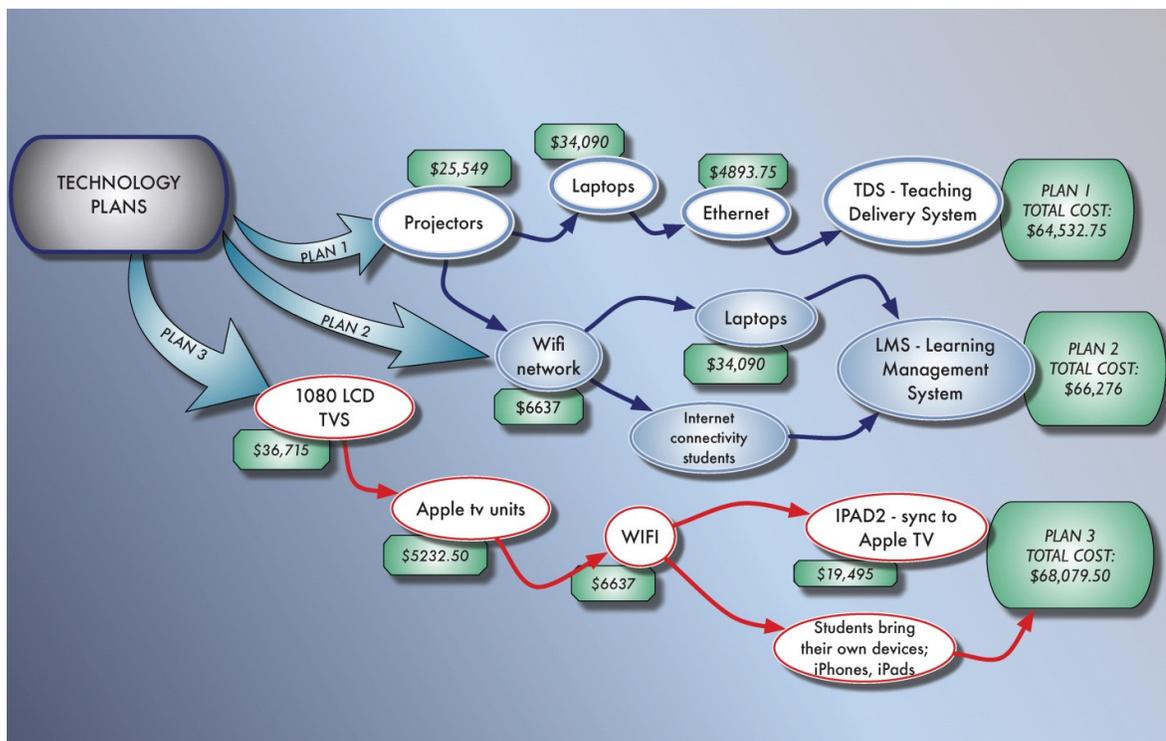
6.3.9 Stage Gate 2 conclusion

Stage Gate 2 may be the most crucial phase of the eLearning innovation. At this juncture, critical decisions will need to be made on the scale of investment required. Decisions of this importance must reflect strategic thinking in terms of long range benefits to the organisation.

Achieving a strategic fit between the organisation and its operating environment will be vital for the continued survival of CAA and its product. The majority of businesses have been required to invest in technology periodically, and modernising ICT systems is seen as a healthy investment in a company's future. Most firms will allocate a percentage of income to research and development, (R&D) and for a PTE, investment in classroom technology must be seen as essential R&D.

The cost analysis in Figure 14 has revealed that ICT Strategy 1 will offer limited benefit, while ICT Strategy 2 would add considerably more value with WiFi access for all students. On the other hand, ICT Strategy 3 would radically change the look and feel of classroom technology, with state of the art touch-screen tablets for tutors and LCD-HDTVs, for only a fraction more cost than ICT Strategy 2.

Figure 14: Itemised cost analysis for three ICT strategies.



Source: Developed by researcher.

It is apparent which of the three proposed ICT strategies would “communicate the vision” of the eLearning innovation (Kotter & Schlesinger, 2008). The added visual impact, convenience and portability of ICT Strategy 3 would enable CAA to appear more up to date than competitors, creating a modern learning environment with high visual appeal.

Training in Apple app usage could be required for ICT Strategy 3. However, most tutors require ICT training and starting with Apple would be no more challenging than Windows. The research findings have indicated iPad use will be consistent with industry, as iPad has been found to be the device of choice in hairdressing salons (see Chapter 5).

For an eLearning innovation which will satisfy CAA’s business goal of improving student engagement to boost student retention and student success, the investment required could easily be absorbed.

6.4 Other Stage Gates

Successful ICT planning in Stage Gate 2 would lead on to other stage gates;

- *Stage Gate 3:* How can CAA train staff in new digital literacy competencies?
- *Stage Gate 4:* How will CAA develop digital teaching resources?
- *Stage Gate 5:* How can CAA satisfy the record keeping demands of stakeholders, such as NZQA; TEC and HITO?

6.4.1 Stage Gate 3; training

eLearning academic advisors have offered important advice to CAA. EAA3 said;

- Train the staff; *“If the staff can’t use it, nothing will work.”*
- Start simple; *“Get a basic working course with pictures; the right amount of online presence.”*
- All staff must be accountable; *“Tell them basic files need to be uploaded to the page before the course starts, and check that each teacher has done it”.*
- Consistency across all departments is important; *“If one teacher doesn’t do it, students will notice and it will undermine the whole thing”.*
- Ensure checks and balances; *“Tell them, ‘we’d really like your feedback on how it’s working so we can adjust it later’.”*
- The project must be collaborative; *“Nobody likes being left behind.”*

- Teacher presence is important; *“It’s not just a place where you shove information and leave; you need a social presence there.”*
- Learn a new approach to writing; *“Learn to write for the web”*.

EAA3 has said there will be resistance to change; *“We’ve always done it this way; why should we change?”* The solution will be, *“Reward the teachers; tell them what a great job they’re doing”*. If the above steps are followed, resistance to change could be minimised, even from older teachers, who tend to resist change more. EAA1 said, *“One old teacher said, ‘yeah, I’m scared of this but I’m determined to crack it’.”*

The research findings have indicated that the development of workgroups would reduce staff resistance to pressure from management. Work group coordination would ease resistance to change by ensuring that participation appears voluntary, rather than as a top-down directive. EAA1 has noted that Moodle uptake at Unitec was successful because it did not appear to be driven by management; *“If it had been a management backed priority, the uptake of Moodle in 2008 wouldn’t have been so successful.”*

CAAT3 has described how a transition to Moodle was achieved in previous employment, saying, *“People are a bit scared of change; especially with technology”*. There were staff training days during student holidays, with a specific *“technology day.”* Teachers had volunteered as Moodle *“gurus”* in workgroup settings, and these self-appointed *“change agents”* had trained others; *“Once we had the training and put our own resources in, everyone could see how brilliant it was; not just for the students but the tutors as well.”*

FG3CAAT has suggested that tutors should identify, *“a support person to troubleshoot technology problems.”* However, EAA3 warned, *“A champion doesn’t want to spend all their time helping other staff catch up”*. Volunteers capable of leading self-directed workgroups may be the most effective drivers of change in an eLearning innovation.

Self-directed work teams are a manifestation of the socio-technical system, (STS) approach, and are often referred to as self-regulating work teams or high performance work teams (Waddell, et al., 2013). Participative work design has been used often in schools, allowing employees to translate knowledge of their work into relevant work designs.

The STS approach is ideal for overcoming resistance to change and understanding it. Employees will take ownership of the design process and will tend to be committed to implementing it. When technological interdependence and uncertainty are high, work should be designed for self-managed teams (Cummings & Worley, 2008). High

performing teams will; sanction the design effort; diagnose the work system; generate appropriate design; specify support systems; implement and evaluate the work design and focus on continual change and improvement (Waddell, et al., 2013).

Workgroups led by voluntary change agents would best suit the eLearning innovation. CAAT4 has fitted the description of a willing change agent; *“I could do so much with Moodle; I would have run a mile with it.”* CAAT4 said, *“There has to be a system where tutors can work out a way to learn from each other.”* Not only would a high performing team of volunteers build competencies around technology; they could also help CAA become a learning organisation, (LO), “empowering action” in the launch (Kotter, 2007).

Moodle could help CAA develop online training processes for tutors. Developing online tutorials to train staff could save the organisation training costs (Moran, 2011). eLearning has been widely accepted as a form of professional development and could stimulate a learning culture which integrates learning into working (Soccio, 2012; Wheeler, et al., 2003).

EAA2 has pointed out that telling teachers which tools to use could spark resistance; *“That “prescriptive speak” is an anathema to great teaching; people hate to be controlled in this way”.* Tutors should choose methods which fit the graduate profile; *“Tell teachers, ‘do what you like, make sure it matches against your learning outcomes, graduate profile and is appropriate to industry’, and then get out of the way.”*

6.4.2 Stage Gate 4; digitising resources

Content, hand-outs and other resources would need to be digitised. Redesigning course materials to adapt to a new medium is a process which would feed back into Stage Gate 3 and the training of staff. Teachers may be more likely to become involved in digital literacy tools training if it is going to result in more resources for the classroom.

The development of new resources could also be an excellent opportunity for more ICT training. Tutors are more likely to become engaged in the process of learning new software if they are using it for a useful purpose. The iterative spirals in Figure 12 have suggested that Stage Gate 3 and Stage Gate 4 could feed into each other.

Change leaders who are digitally literate should lead the project. Change leaders could ensure that new resources are created which fit teaching needs, rather than translating tired old content into a digital form.

Development of new resources could be folded into staff training processes in a process of continuous improvement, reinforcing CAA's new paradigm of organisational learning, (OL) (Waddell, et al., 2013). A mutual need for staff to come together and rewrite outdated resources could allow change agents to embed the change in the culture and build conversations around teaching practices (Kotter, 2007).

EAA1 said, *"You don't need more training time sitting in a computer room; you need more conversation."*

Renewal of the curriculum design would create an opportunity for a community of practice collaboration with other education providers. Content redesign should be on-going throughout the eLearning innovation as a process of continuous improvement until innovative practices have been embedded in the organisational culture (Kotter, 2007).

EAA1 and EAA3 have agreed that a community of practice approach helped Unitec with the shift from Blackboard to Moodle; *"Community of practice will help them all move forward on the basics together."* EAA1 has compared a community of practice approach to the Maori philosophy of ako; *"The teacher as the learner, not always the expert."*

CAAT1 and CAAT2 have mentioned that they feel exposed in front of their students. CAAT 1 said, *"They know twice as much as I do"*. This apparent discomfort with a high level of student digital literacy could be reduced if ako is adopted as a teaching/learning philosophy. CAAT1 said a community of practice approach moves the pedagogy away from a traditional teacher/student model to, *"More of a social constructivist approach; developing as a teacher; focusing on learning as well as the student; it's a bit of a triangle."*

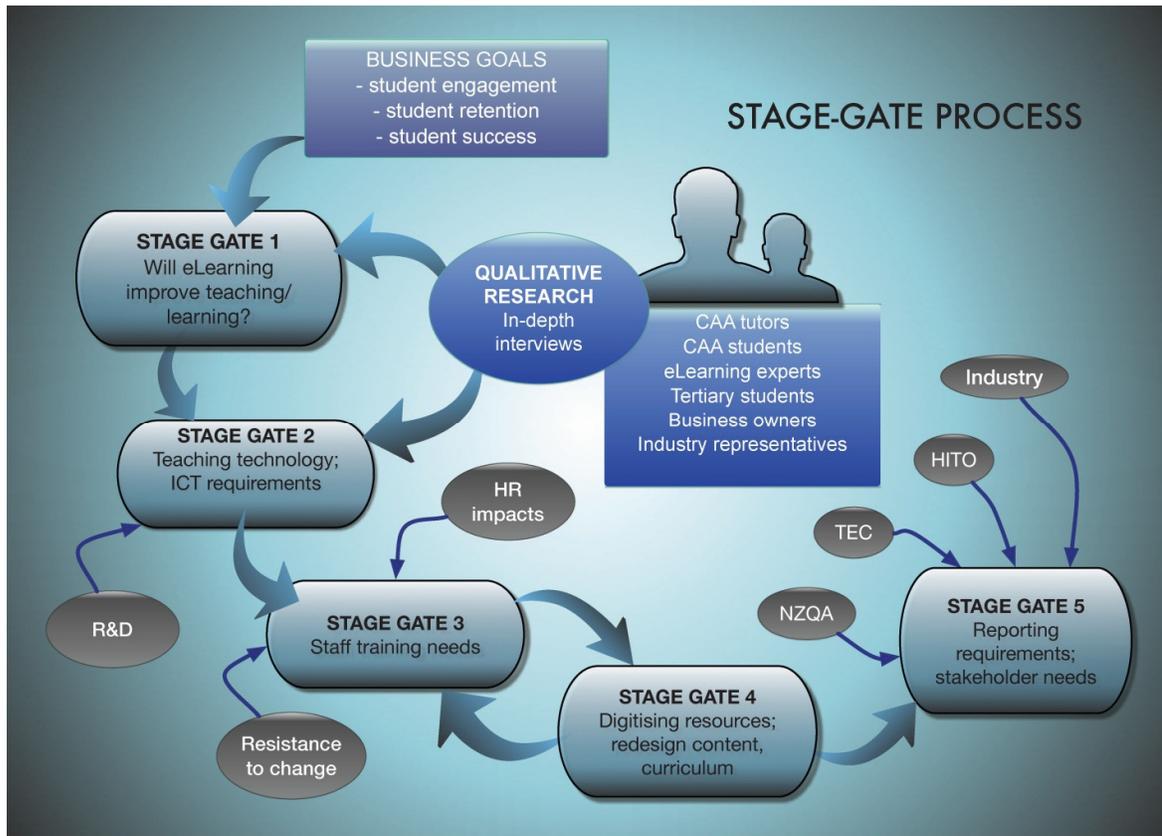
6.4.3 Stage Gate 5 – Satisfy record keeping demands of stakeholders

When record keeping practices are going to be shifted to a digital space, training may be required in other areas of the organisation, such as administration. HITO, NZQA, TEC and others have strict requirements around record keeping, and FG2CAAM has expressed some apprehension around how those requirements will be impacted by a shift to a digital space, noting that, *"HITO or NZQA may require us to input our results digitally."*

Future discussion with management should emphasise that Moodle has been designed to assist academic reporting in universities and is widely used for this purpose around the world.

Figure 15 illustrates the full stage gate process for CAA. Issues around the capture of data for reporting purposes will feed back into Stage Gate 4 and Stage Gate 3, informing staff training needs and the digitising of resources.

Figure 15: The full stage-gate process for an eLearning innovation at CAA.



Source: Developed by researcher.

6.5 Chapter summary

In Chapter Six, recommendations have been put forward to CAA based on the research findings. The importance of blended learning has been recognised, with the need to blend face-to-face teaching in the classroom with emerging ICT, such as the internet and the use of projection for audio-visual stimulation, and an LMS to guide learner development. Using Unitec's extensive experience transitioning to Moodle as a benchmark, the researcher recommends CAA uses Moodle as an LMS, joining a large Moodle community and entering a community of practice relationship with other institutions.

In Chapter Six, strategies were considered for delivering the course effectively through Moodle, with the proposed use of a stage gate process with “fuzzy gates” rather than rigid gates, to allow for flexibility throughout the process innovation. Stage gate 1; the decision to commit resources; has been surpassed by the qualitative research in this thesis. Stage gate 2; the matter of which ICT infrastructure and solutions will be required; has been explored at length in Chapter Six, through the analysis of three ICT strategies. Questions have been asked around the capabilities of various technologies within the classroom, and which strategy offers the most value for learners compared to the scale of the investment.

Chapter Seven considers the main findings of the research and tapers conclusions down to concise points. An overview of the body of work in the research is provided in Chapter Seven, and through synthesis of the most important findings, final recommendations are put forward to CAA.

7.0 CHAPTER SEVEN - CONCLUSIONS

The findings of extensive focus group and interview analysis have been explored in detail throughout Chapter Five. In Chapter Six, those findings have been summarised and the conclusion drawn that Moodle is a good place to start for an eLearning innovation at CAA. The strengths and weaknesses of Moodle have been considered, and the design of an innovation strategy discussed. Three ICT strategies were considered and evaluated.

The main findings from the research have been summarised in Chapter Seven. Final recommendations to CAA have been offered based on the experience of eLearning academic advisors with extensive experience using Moodle in a tertiary environment.

7.1 Conclusions and recommendations

In Chapter Two, the literature review findings revealed that online learning alone will achieve only the same level of engagement as face-to-face teaching, while more significant gains in student engagement could occur if face-to-face teaching is combined with online learning, in a blended learning model.

The literature review analysis concluded that CAA will need a blended learning model which combines face-to-face delivery with online engagement, using an LMS such as Moodle. This hypothesis has formed the basis of extensive research with end users of the technology at CAA and other stakeholders.

The research question, *“Will the introduction of eLearning, blended learning and digital literacy tools training improve student engagement, resulting in higher levels of student retention and student success at CAA?”* has been analysed in this research thesis using a triangulation of views from several different stakeholder groups, including CAA tutors, CAA students, CAA management, industry representatives and business leaders. Benchmarking was provided by interviews with Unitec post graduate students who have experienced eLearning, and Unitec eLearning academic advisors.

7.1.1 Main findings

The findings have indicated that introducing blended learning at CAA will boost student engagement, therefore improving retention (Ferrari, et al., 2009). Increased student retention will result in deeper learning, giving graduates more confidence when applying for jobs and resulting in stronger careers in their target industries (Lerer & Talley, 2010; Moon, 1999).

The findings have also indicated that tutors will benefit from the introduction of new technology which could enable them to perform their teaching roles to a higher standard.

Instead of a *product innovation*, or a new line of education product, the addition of eLearning would represent a *process innovation*, or an improvement in the current processes of delivering education. It would improve service to customers, i.e., the learners, by bringing a higher quality and standard of education to the learner.

Keeping pace with technology which is widely used in industry will be important for CAA to achieve a strategic alignment between internal practices and industry practices (Dunphy & Stace, 1988). The findings have shown that target industries tend to use; iPad for client consultation and emails; electronic booking and POS systems; digital photography; Photoshop; Facebook for marketing and networking. To provide a graduate profile which matches the requirements of industry, CAA must build learner capabilities around these digital tools which are widely used.

The findings have indicated that improved technology would empower tutors to use more teaching skills to shape the course content innovatively.

Neither teachers nor learners have a desire for Facebook to be appropriated by institutions for educational purposes. EAA2 has said, "*Facebook is not a useful educational tool; there's no pedagogical thinking.*" However, interaction is vital for student engagement and options must be pursued for creation of a social forum with a more professional format, where students can build an online community in privacy (Davis & Wong, 2007).

The findings have indicated it may be useful for CAA to view Facebook as a powerful source of free promotional opportunities. While it may be potentially difficult to manage that message, the organisation could build some internal capabilities around monitoring and managing the usage of Facebook by staff and students.

The findings have indicated that the best course of action for CAA would be to accept Facebook as an important channel for student communication, without attempting to appropriate it for academic purposes.

Regardless of any efforts to restrict Facebook usage, students will continue to use Facebook and it will remain a source of back-channelling about the learning experience. The challenge which faces CAA in the future will be how to participate in this dialogue. While it may never be possible to manage the back-channelling of students online, CAA can begin to take control of its own digital footprint by encouraging student discussion in more academic settings, such as blogs and ePortfolios.

The findings have indicated it is vital for CAA to channel the creativity and digital literacy of students like CAAS2 away from Facebook into professional online tools, such as blogs or ePortfolios.

A policy of banning cell-phones in class would be a giant step backwards for CAA, contradicting all modern education trends. The findings have indicated that separating students from their devices would make them more “enraged” than engaged (Ferrari, et al., 2009; Ito, et al., 2010). CAA should focus on teaching students how to use their devices for education, marketing their skills online, networking and finding employment.

An adjustment of management’s perception of eLearning at the time of this research would be necessary if CAA is going to take the crucial steps towards developing an ICT strategy which will enable CAA to remain relevant in the education market. Building HR training capabilities around ICT usage will also be necessary for CAA to maintain a strong teaching culture with digital literacy skills.

Managing resistance to change will be critical for the success of an eLearning innovation. Advice for overcoming that resistance has been to develop staff capabilities concerning technology. Despite a tendency towards resistance to change, particularly with older teachers, analysis of the findings has indicated strongly that teaching staff will work hard to support an eLearning innovation, because they believe it will benefit students and teachers in the long run.

The findings have indicated that the majority of stakeholders believe it is worth the time and effort involved for CAA to develop eLearning capabilities and competencies around ICT technologies. It will be important for eLearning solutions to be part of the on-going conversation around teaching and learning at CAA.

Work-groups led by voluntary change agents would be the best approach for developing training routines and teacher development for an eLearning innovation. Not only would a high performing team of volunteers develop competencies around technology, they could also lead CAA towards becoming a learning organisation, (LO) (Stamm, 2008).

The development of new resources should be folded into staff training in a process of continuous improvement, reinforcing CAA's new paradigm of organisational learning (OL).

7.1.2 Key recommendations

Key recommendations for CAA have emerged from the analysis of findings. Significant advice for CAA has come from academic advisors who are experienced in training teachers to use Moodle effectively. EAA3's advice was consistent with other eLearning experts interviewed;

- *Train staff; "just the basics, not fancy stuff".*
- *Get the course operational; "get a basic working course with pictures"*
- *Presence; "you need a social presence on Moodle".*
- *Learn web writing; "make it visual."*
- *Manage online fears; "probably half their students know more about online stuff than they do."*
- *Accountability; "Tell them before your course starts you need to have your files up; check that each teacher has done it."*
- *Reward the teachers; "tell them what a great job they're doing."*
- *Consistency; "if one teacher doesn't do it, students will notice and it will undermine the whole thing."*
- *Checks and balances; "tell staff, 'we would really like your feedback on how it's working so we can adjust it later'."*
- *Collaborate; "nobody likes being left behind."*
- *Analyse tracking statistics; "such as, 'everyone clicked on this one', or, 'nobody went there'."*

Managing resistance to change will be critical to the success of an LMS launch. *A key recommendation for overcoming that resistance is to develop staff capabilities around technology.*

EAA1 pointed out, “*Staff will need to be developed; that means time talking together; sharing what’s working and what isn’t.*” CAAT4 suggested that busy schedules mean allowances should be made for the higher work load; “*Online training should be available to tutors during the work regime,*” to create, “*a system where tutors can learn from each other*”.

7.1.3 Evaluation of the stage gate process

An eLearning strategy will require significant investment and should be approached through the use of pilot studies. Trials will allow teachers to develop know-how around methods of engaging students in the learning process (Davis & Wong, 2007). Just as an architect would not start a building based on their first sketch without creating a model first, a design focussed organisation will appreciate the need to test a few models before undergoing major innovation (Osterwalder, 2004).

Engagement surveys should be run throughout the eLearning pilots to assess the impact on attendance and retention. EAA3’s advice to, “*analyze tracking statistics,*” is critical. This testing should enable work groups to recommend final decisions to the organization on which ICT strategy will be best practice.

In Chapter 6, recommendations have been put forward by the researcher for a stage gate process which will guide the eLearning innovation at CAA. After developing a vision and strategy, and then communicating that vision to the organisation, it is important to lay out a guideline which makes the innovation accessible to all involved in the change (Kotter, 2007). This will inspire buy-in from employees, who will drive the learning process throughout the innovation, and will help reduce resistance to change.

Each step in the stage gate process will allow the innovation to become embedded in company culture (Kotter & Schlesinger, 2008). The stage gate process is flexible enough to be adjusted for emergent strategy, which will allow planners to act as a catalyst for management to think creatively (Mintzberg, 1994).

eLearning will require a rapid evolution in learning processes, requiring CAA to develop a culture of continuous innovation which enables staff and managers to view change as a welcome experience, rather than a threat to established ways (Waddell, et al., 2013).

In Chapter 6, three ICT strategies have been considered. ICT Strategy 3 has been found to offer the most value, equipping classrooms with LCD HDTVs which tutors can sync to iPads. ICT Strategy 3 is a significant departure from the conventional projector/PC model

seen in traditional learning environments, offering the convenience and portability of tablets and wireless connectivity. The cost analysis has revealed that ICT Strategy 3 would require approximately the same investment as a traditional classroom projector/PC model, at an estimated cost of \$20.97 per student over five years.

CAA is in a unique position to completely re-imagine the shape and texture of classroom technology. Innovation in this area would be essential to create a point of difference with competitors. Instead of a follower, CAA could become an innovator and trail-blazer.

While an ICT innovation may be regarded as an incremental change in the way CAA delivers their services, an opportunity exists for an overhaul of the way CAA organises its teaching and learning practices, just as Moodle initiated a movement toward community of practice at Unitec. A new paradigm concerning teaching and training at CAA could be regarded as an organisational transformation, (OT) (Waddell, et al., 2013).

Rivals entering the industry in the future may be more equipped for tomorrow's learner, and this readiness could pose a significant challenge to CAA. Any effort to create barriers to new entrants through increased specialisation would benefit the organisation (Porter & Kramer, 2006). Implementing a program of co-operation with competitors and other PTEs concerning eLearning research could benefit all players in the industry by keeping out new entrants, and this "co-opetition" could increase OL. "Co-opetition" with international schools could also be of benefit.

The pace of innovation has been growing in the 21st century knowledge society, and it will be vital for tertiary education providers to recognise their role in developing the creative potential of students (Ferrari, et al., 2009; Tikhomirov, et al., 2010). Just as hair-dressing is about keeping up with changing trends, education providers also need to keep pace with teaching trends (Lee, et al., 2008).

Modern education has shifted from a teacher-centric paradigm where the learner is an empty vessel to be filled, towards a collaborative environment where learners are co-creators of their education (Arenas, 2009; Beghetto, 2007; Ferrari, et al., 2009; Ito, et al., 2010). It is important for CAA to embrace student-centric models of learning which create shared value for the consumer and the community, and prepare students for the challenges of the digital world they live in (Porter & Kramer, 2011).

7.1.4 Final conclusions

The findings which have been described in Chapter Five and have been analysed in depth through Chapter Six have demonstrated that the original hypothesis has been verified; *An eLearning innovation will increase student engagement, therefore improving CAA's business goals of student retention and student success.*

This study has challenged the misconception that digital literacy tools have no place in training for a practical, hands-on trade. While FG2CAAM have said that online learning or digital literacy training would not be necessary for teaching applied trades, the findings throughout this study are evidence to the contrary; eLearning academic advisors from Unitec like EAA1 have revealed that applied trades are strong users of online technology.

It is essential for learners to possess rudimentary skills in digital technologies if they are going to become capable business leaders in the future. The internet and audio-visual multimedia in the classroom can enhance their learning experience to trigger deep learning, even if the final assessment of their skills may be a hands-on evaluation.

In addition to using an LMS such as Moodle, it will be vital for CAA to expose students to free blog tools such as WordPress or Tumblr and tools such as Mahara, so they may develop ePortfolios as digital CVs for future employers.

Industry representatives such as IR1SO and IR2HAR have testified that the industry would welcome students with more digital literacy skills, particularly skills of marketing their work online. Industry representatives would prefer employees who are aware of the impact their online activities have on business success.

FG2CAAM have appeared reluctant to pursue an ICT strategy. Understanding the reasons underlying that resistance to change will be critical to the on-going success of any ICT innovation at CAA. The reasons are many and varied; a general reluctance to commit to the scale of any investment required with inadequate knowledge and information; resistance to the scale of change in functions and processes which an ICT innovation could demand; misconceptions about the role technology could play due to a lack of prior experience; a fear of the highly technical aspect of ICT; and quite simply, fear of the unknown due to a lack of personal experience with technology.

FG2CAAM may also avoid the provision of staff access to technology for a multitude of reasons; fear of technology going missing due to inadequate supervision; technology

becoming broken through misuse and requiring repair; fear of tutors having access to the internet, without enough management monitoring capability.

Many of these fears stem from uncertainty about exactly what would be involved in an eLearning innovation. There may be an underlying lack of trust of staff and doubts about their level of personal responsibility; these doubts could prove to be unfounded, given the enthusiasm expressed by teachers during this study and the level of ICT experience already existing in the team. For FG2CAAM, confidence would grow from experience after trying an eLearning innovation and allowing processes to develop which could support communication with management that may ease many of FG2CAAM's concerns.

Many of FG2CAAM's concerns stem from unfamiliarity with technology. There is an underlying subtext in FG2CAAM's comments that computers are for "play", and not for serious work. A community of practice relationship with schools which already use eLearning successfully would help erase many of those concerns.

Finally, FG2CAAM's fear of the size of the investment required would be eased by access to adequate information. Opening management's eyes to studies about technology and its impact on education would alleviate some of those fears. Being armed with precise knowledge about ICT and how it can affect the business could ease much of the hesitation.

Ultimately, trial and error through the observation of pilot studies operating live in the classroom will allow FG2CAAM to see that not only is blended learning the future of education, but the future is already here and opportunities are already being seized by competitors. The time to act has well passed.

Much resistance to change stems from a lack of knowledge. The solution will be to generate more organisational knowledge around the question, "*what is eLearning?*" and make it part of the sustained dialogue within CAA management for solutions in teaching and learning.

It is hoped that much of the subtext underlying FG2CAAM's resistance to change may be resolved by the findings of this research, which has established that it will be essential for CAA to develop a blended learning program if it aspires to remain relevant in today's education market. This research has demonstrated that many of the key stakeholders are receptive to the introduction of digital literacy tools training and would contribute their energies to helping the program to succeed.

As established in the literature review, the findings have indicated that technology can support teachers in the use of enablers of creative teaching, such as varying teaching methods, using cultural awareness, group work and collaborative learning (Ferrari, et al., 2009). FG1UPGS has noted that online work allowed the lecturer to vary teaching methods by identifying students who, “*weren’t getting it*”, and, “*teaching to the holes in the knowledge.*”

The challenge for an education provider will be how to measure the impact of eLearning on student engagement and student success. While overall engagement and success can be measured post launch, it will remain difficult to quantify how much of that success could be attributed to eLearning, and how much of it could be the result of teacher enthusiasm due to increased investment in classroom ICT (Ruhe & Zumbo, 2009).

It may be difficult to quantify a direct relationship between eLearning investment and student retention or student success, apart from a “before and after” snapshot. However, research by EAA1, EAA2 and EAA3 has indicated strong evidence of a positive relationship between blended learning and engagement.

While it could prove elusive to quantitatively separate the direct role eLearning has played in student success from other components in the education experience, the qualitative findings in this research have confirmed the literature review findings that blended learning will add extra value for the learners and will result in a boost in student engagement. The interview findings have also conclusively demonstrated that there is a positive link between engagement and student success.

EAA2 has also suggested it could be difficult to separate the “e” from the “*Learning*”. It may be elusive to isolate the role technology plays in student engagement when a large part of modern education involves a spectrum of digital literacy, from basic word processing and graphic presentation of resources, to more complex online interaction in social media.

Research concerning these issues has traditionally been conducted from an education paradigm with a social collectivist approach. Education academics have often resisted a business paradigm, in the belief that business goals are contrary to goals of collective social benefit. EAA2 said, “*Education isn’t a business? I find that ridiculous; of course we’re a business*”. It is important during the development of an ICT innovation at CAA that the teaching and learning needs of students and tutors are paramount in the

discussion. If the primary business goal is the advancement of student success, then CAA's business goals will align with producing benefits for society as a whole.

What has been missing from the academic dialogue is the extra depth a business viewpoint provides; what will make tertiary institutions viable businesses with the financial power to generate innovation throughout the learner's journey? How can PTEs become part of the learner's journey before they enrol and after they have graduated, sustaining a meaningful relationship throughout their working lives? What can empower education providers to influence or guide government policy on education? The missing component in this conversation is the empowerment which data can provide; the kind of useful metadata which an LMS such as Moodle can provide.

Along with pedagogy, it is important for PTEs to sustain financial success, or the oxygen will be sucked out of important innovation which they require to become leaders in future conversations about education. Without business growth and development the innovation which PTEs must embrace to cater for society's evolving needs will stagnate.

Add to this volatile industry mix a disruption such as MOOCs; now anyone can access the best education in the world, for free. How can the traditional learning institution survive in the face of such global competition? The antidote to this disruption will be when PTEs build innovative thinking into the organisation and offer products which add value to the learning experience.

To adapt to this future, CAA must remodel itself as a learning organization. Instead of clinging to an out-dated view of tertiary institutions as islands, surrounded by competitors, it will be vital for CAA to reach out to stakeholders and develop strong community of practice relationships.

To achieve this ambitious vision, CAA needs to increase the length and breadth of the current conversation around education to include eLearning and digital literacy tools. The engagement which comes with an online community and the subsequent capturing of metadata could breathe new life into CAA's view of itself as an institutional island.

7.1.5 The future for CAA

After evidence had been collected for this research, CAA changed ownership and became part of the Inteuri Education Group. With new leadership, an exciting opportunity exists for CAA to look again at how it approaches an eLearning strategy. With the recent addition of Quantum Education to the Inteuri group, opportunities exist for a community

of practice with educators already involved in the online space, and the sharing of knowledge with other PTEs who are not competitors.

The new management is in a powerful position to look at business development opportunities with fresh eyes. Under previous ownership, CAA was reluctant to bring technology into the conversation about teaching and learning. With a group of learning institutions to consider, and a much larger pool of learners, it is hoped that new management will be aware of the importance of ICT investment in education.

Opportunities exist for a sharing of knowledge across the Inteuri colleges which will be unique in the NZ PTE landscape. The challenge will be for the new leadership to consider compatibilities across the campuses and design an ICT strategy which will ensure a consistent development of capabilities throughout the group. The message in this research about the need for design thinking in the ICT space will be even more relevant.

It is hoped that the insights gained from this research will help inform an eLearning innovation at CAA and across the Inteuri group. As the experience at Unitec has shown, regardless of the discipline, the challenges of how to engage with students and adapt teaching practice to an online space remain the same.

This thesis has proposed a community of practice relationship with other established tertiary providers. Forming a relationship with a Moodle partner for hosting of Moodle and joining a vast Moodle community would mean CAA can benefit from lessons learnt by others and be supported. Forming a community of practice relationship with Unitec's TPA Moodle advisors could help Inteuri avoid many of the pitfalls commonly encountered in new eLearning ventures.

A common mistake would be a top-down directive which overwhelms staff, and stimulates resistance to change, such as a management directive to transfer the entire course to an online space. A campaign driven from the middle of the organisation to build internal capabilities through self-managed work groups, and then building good community of practice across the schools in the Inteuri group, could ease resistance from teachers. Achieving small goals at first would encourage participation rather than overwhelming staff with overly ambitious goals.

Building strong teaching and learning practices into the transition online could be a positive antidote to resistance to change from those who see technology as a threat, much as Unitec did with the Living Curriculum. As EAA1 described, *"Moodle was an opportunity to introduce a community of practice at Unitec"*.

Overall, it is important for management to align its strategy with the needs of its core customer group, its stakeholders, the external business environment and the activities of industry. It is important to capture the mood of the market and add value to the product where it is missing

With any innovation at CAA, it will always be about building good teaching and learning practice and developing the systems to support it. eLearning is a continuum, and CAA is just deciding at which point on the continuum they want to enter.

Due to new management, the potential exists for CAA to have exciting new conversations about the future of blended learning in the education space, which could affect real change in education in New Zealand. It is hoped this research will help to inform that conversation as Inteuri poises itself to evaluate the strengths of online and blended learning in the future of education.

8.0 Appendix

8.1 Information for participants

Information for participants

Could the use of online learning, blended learning and digital literacy tools boost student engagement, student retention and student success in a trade based tertiary training provider?

My name is Curtis Young. I am completing a Master of Business at Unitec, in Carrington Road, Mt Albert. For my theses, I am researching the impact of online learning on student engagement at a tertiary level. I have worked in tertiary education for four years, and have an interest in the introduction of training for digital literacy skills. My particular area of focus is hairdressing training.

It would be of great value to my studies if your organisation is willing to participate in this research. It would take very little of your time, but your participation would contribute greatly to the depth of knowledge in my research. Please read on for further detail.

What I am doing

I have worked in the hairdressing industry for thirty years, and in education for the last five years. For this thesis, I will be using Cut Above Academy as a case study. The topic of the study is the development of an innovation strategy for a hairdressing academy. In this case, the innovation will be an eLearning strategy, combining blended learning using a learning management system, (LMS), and strategies for exposing students to more education in the use of digital literacy tools, such as software, computers, and digital devices.

The aim of my study is to establish whether or not the adoption of digital literacy tools and online learning may increase student engagement at Cut Above, improving student retention and student success. I aim to evaluate the potential impact an online learning innovation may have on student retention and student success, by interviewing people who have previous experience in this field.

Interviews will be conducted as market research to establish whether the potential end-users of the technology are receptive to eLearning, and whether staff will be willing to invest the time and effort necessary to learn how to use it. The results of this study may assist management in decision making about how to proceed with a pilot study.

This study will examine the HRM implications of a proposed strategic innovation by exploring the attitudes of staff and end users towards the concept.

Interviews with Cut Above students and staff will be conducted, and compared to findings from interviews with students and staff of other tertiary organisations which currently use online learning or blended learning programs.

How important is digital literacy in the industry today? This study aims to examine this issue through discussion with professionals in the industry. While the stereotype dictates that hairdressers do not need ICT skills, the reality of business today challenges that traditional view.

The education world has changed with the arrival of digital technologies, and learner's needs have changed as a result. Increasingly, more students expect access to the internet and class based digital technologies is the norm in their education experience. The process of modernising is important for private tertiary education providers, and this study aims to bring depth to that discussion.

What it will mean for you

To enable me to explore the role of innovation in the tertiary environment and the HRM impacts that accompany it, I will be seeking inputs from you regarding;

Tutors (example)

- What is the extent of your daily usage of the internet and digital technologies?
- What is your previous experience with eLearning, or LMS such as Moodle, and how did it benefit your teaching?
- Would it improve your ability to organise your workload and your class lessons if you had access to the internet and Moodle?
- Your views on how you think it would impact on engagement of the students during class-time if you had Moodle and audio-visual capability.

The interview will take an hour of your time. The interview will be conducted in your premises, preferably outside of working hours. With your permission, the conversation will be digitally recorded for the purposes of integrity, research purity and accuracy. Details or information pertaining to your identity and that of your organisation will not be disclosed in the thesis.

I am required by research ethics to seek your consent first, and upon your agreement, you will be given a consent form to sign. However, should you change your mind and wish to withdraw from this research, you can do so within two weeks after the date of the interview and request that all information provided by you be withdrawn.

Your name and any information that may identify you will be kept completely confidential. All information collected from you will be stored on a password protected file and only you, my supervisors and I will have access to this information. Please contact me if you need more information about the research. If, at any time you have any concerns about the research project you can contact my primary supervisor:

My supervisor is Dr Andries Du Plessis, phone 815 4321 ext. 8923 or email aduplessis@unitec.ac.nz

UREC REGISTRATION NUMBER: 2012-1102

This study has been approved by the UNITEC Research Ethics Committee from **13.12.12** to **13.12.13**. 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 6162). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

(The above form is repeated with the following passages inserted in the place of the italicised block, depending on the recipient.)

Students

- How often you use the internet and what you use it for.
- Your views on not currently having the internet at course; has it impacted on your studies, or did it make no difference?
- If you had access to the internet during course and some kind of online resource for your class to view materials and use in your studies, do you believe it would help you to do your studies?
- Would you complete homework if it was set for you online?
- Some general idea of whether you believe internet access and online course content would benefit your course, and whether you believe it is necessary.

Unitec students

- A discussion of which classes you enjoyed the most during your studies and why you found them more engaging than others. Was it something the lecturer did or activities they facilitated which enabled you to connect more with the content?
- How has the use of the internet and Moodle benefitted your studies?
- When you have had online work to do, using Moodle, were there some lecturers who used it more effectively than others, and what made it more effective?
- Which paper stood out for you as really enjoyable, and what made it a great learning experience for you?
- How do you feel you would have performed in your course without internet access and without Moodle?

Te Puna Ako researchers

- Do you feel Moodle is an effective education tool, and how? What are its strengths and what are its weaknesses?
- In what areas could Moodle usage by lecturers be improved?
- Is Moodle increasing student engagement at Unitec?
- Is the current use of Moodle and online learning furthering the business goals of Unitec as an organisation?
- From the research you have conducted, what would be your advice to an organisation starting an ICT innovation and introducing Moodle for the first time?

Salon owners

- How often do you use the internet in the course of day to day running of your business?
- What do you use it for, and how does it assist the running of the business?
- Do you have wifi and is it available to staff?
- Are your staff required to perform actions which involve computers and the internet; website usage, blogging, online booking, database keeping, accounting packages, etc?
- What level of digital literacy would you say you require in your staff?
- Would a job applicant's ability with digital tools impact on your decision to hire them, or is it not considered important?
- How can you see the internet making an impact on your business in the future, and on the hairdressing industry as a whole?

8.2 Participant consent form



Participant consent form

Could the use of online learning, blended learning and digital literacy tools boost student engagement, student retention and student success in a trade based tertiary training provider?

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 am under no obligation to participate in this project and that if I so decide, I may withdraw from this research project within two weeks of the date of the interview.

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 researchers and their supervisor. I also understand that all the information that I provide will be stored securely on a computer at Unitec for a period of 5 years.

I understand that my discussions with the researcher will be taped and transcribed, and a copy of the recorded interview and/or its transcript will be made available to me upon request.

I understand that I can view a copy of the finished research document.

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

Name:

Signature:

Date:

Researcher: Curtis Young

Signature:

Date:

UREC REGISTRATION NUMBER: 2012-1102

This study has been approved by the UNITEC Research Ethics Committee from **13.12.12** to **13.12.13**. 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 6162). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

8.3 UREC consent

Curtis Young
11 Trojan Crescent
New Lynn
Auckland

13.12.12

Dear Curtis,

Your file number for this application: **2012-1102**

Title: **Could the use of online learning, blended learning and digital literacy tools boost student engagement, student retention and student success in a trade based tertiary training provider?**

Your application for ethics approval has been reviewed by the Unitec Research Ethics Committee (UREC) and has been approved for the following period:

Start date: 13.12.12

Finish date: 13.12.13

Please note that:

1. **The above dates must be referred to on the information AND consent forms given to all participants.**
2. **You must inform UREC, in advance, of any ethically-relevant deviation in the project. This may require additional approval.**
3. **Organisational consent/s must be cited and approved by your primary reader prior to any organisations or corporations participating in your research. You may only conduct research with organisations for which you have consent.**

You may now commence your research according to the protocols approved by UREC. We wish you every success with your project.

Yours sincerely,



Gillian Whalley
Deputy Chair, UREC

Cc: Cynthia Almeida
Andries Du Plessis



study@unitec.ac.nz
Tel +64 9 849 4180
Fax +64 9 815 2901

www.unitec.ac.nz

Postal address
Private Bag 92025
Victoria St West
Auckland 1142
New Zealand

Mt Albert campus
139 Carrington Rd
Mt Albert
Auckland 1025
New Zealand

Newmarket campus
277 Broadway
Newmarket
Auckland 1023
New Zealand

Northern campus
10 Rothwell Ave
North Harbour
Auckland 0632
New Zealand

Waitakere campus
5-7 Ratanui St
Henderson
Auckland 0612
New Zealand

8.4 Interview guides used by researcher

CAA tutors; Theme; would access to the internet improve your teaching?

- How often do you use the internet?
- Do you carry a portable digital device daily?
- Would you carry one if you had access to the internet at work?
- Do you consider yourself digitally literate? Explain.
- Do you feel access to the internet at work would improve your ability to organize your lessons?
- How would you feel about a projector in the classroom which would allow you to show multimedia to students, such as streaming video on the internet? Describe if you think this could be of benefit to your studies.
- Have you had previous experience with Moodle or any other LMS? If so, how was it used? Was it effective? Did you use it a lot?
- Would you like to be able to show students websites of interest, such as fashion sites or employer websites?
- Describe what impact you think it would have on student engagement if they had access to the internet during course.
- Would you need additional computer training if Cut Above required you to use the internet or Moodle in your teaching delivery?
- Would you be interested in receiving more training in the use of computers, software applications and personal digital devices? What kind of training would you need?
- How do you feel it would impact on job satisfaction if you had access to the internet during class and the ability to show students digital media using a projector?
- How would it benefit your teaching if you had access to the internet and a learning portal such as Moodle?

CAA students; Theme; would the use of online learning and digital literacy tools enhance your education experience?

- Do you have access to the internet at home?
- How many times a week are you on the internet?
- How many times a day do you use Facebook?
- Do you have a laptop or internet-ready handheld digital device?
- Would you bring a personal digital device to course if you had access to the internet at course?
- Do you think you would learn more if you had access to the internet at course? Explain why.
- What abilities do you currently have with digital technologies, whether devices or software?
- Do you create any of your own media content (video, audio, music, images)?
- Would it benefit you if your course provided more basic training in how to use computers and software where it relates to your job or your industry?
- Do you have a blog? If not, would you be interested in learning how to create a blog for yourself?
- How do you record your activities online?
- Explain what you know about creating an eportfolio. Would you be interested in receiving assistance with creating an eportfolio?
- Did you use the internet in course related study?
- Describe your experience with the internet and how it affects you emotionally.
- Explain how you would feel if Cut Above provided internet access and direction for your studies through an online course page.

eLearning Academic Advisors; Theme; how has the use of Moodle transformed teaching at Unitec?

- Describe the research you have done relating to Moodle, online learning and student engagement.
- In your experience, what has been the greatest hurdle in the uptake of Moodle?
- How have lecturers responded to the use of Moodle?
- In your experience, how have students responded to the use of Moodle?
- In your opinion, do lecturers integrate Moodle into their classroom delivery as effectively as they could? Explain.
- In your opinion, has the use of Moodle had any impact on success of the core business of Unitec?
- In your opinion, could Unitec go back to delivering education without the use of Moodle, without impact on student success?
- Describe what aspects of Moodle you personally enjoy the most.
- What do you believe is the future role for online learning, or distance learning without face-to-face delivery?
- Where is digital learning heading in the future, and is Unitec ready to catch that wave?
- Would you have any advice for a tertiary institution considering embarking on an eLearning venture?
- Are there any destabilizing effects caused by the intrusion of digital media into education, and the current focus on eLearning?

Salon owners; Theme; is it of value to the industry for hairdressing academies to provide some basic training in digital literacy for their students?

- How long have you been in business, and how has your use of the internet and computers changed in that time? How often do you use the internet in the course of day to day running of your business?
- What do you use it for, and how does it assist the running of the business?
- Do you have wifi and is it available to staff?
- Are your staff required to perform actions which involve computers and the internet; website usage, blogging, online booking, database keeping, accounting packages, etc?
- What level of digital literacy would you say you require in your staff?
- Would a job applicant's ability with digital tools impact on your decision to hire them, or is it not considered important?
- Do your clients ever require internet access during their session in the salon? Is there increasing pressure on the business to provide internet access as part of good service?
- Are there ways the business uses the internet and digital media to communicate with clients beyond their salon visit?
- Are you or your business involved in the creation of your own digital media, such as; images, video, music, web?
- In your opinion, is it necessary for hairdressing training institutions and academies to promote blended learning options and online learning?
- How can you see the internet making an impact on your business in the future, and on the hairdressing industry as a whole?
- What do you think the future holds for the industry?

Industry representatives; Theme; what impact has the internet and digital technology had on the way business is conducted in the hairdressing industry?

- Do you feel there is a role for the internet and digital literacy in the modern hairdressing salon? Or is there no place for these technologies in the modern hair business?
- In your experience, do salon owners discourage staff from using digital technologies during work time, or is that attitude changing?
- Are there areas where digital technologies could improve interaction with clients? Do clients often come in requiring access to the internet during their session? Is there an expectation on the hair salon to provide internet access as part of their service?
- Are staff in hair salons expected to possess some capabilities with digital technology? Is digital literacy becoming a requirement in a good salon?
- In your opinion, is the hairdressing industry moving with the times quickly enough, or are there areas where adaptation needs to be undertaken?
- Is the NZARH or HITO pushing the utilization of digital media in any areas of the industry? Are you involved in any initiatives promoting digital literacy to the hairdressing industry?
- Where do you predict digital technologies or digital media will have an impact on the hairdressing industry in the future?
- In your experience, is the attitude of younger hairdressers entering the industry towards digital technology different to their predecessors, and how has that stimulated change in the industry?
- Is the hairdressing industry overseas different to the New Zealand industry in their experience with digital media and ICT? Are hairdressers overseas more progressive in this area?
- What are the best salons in the business doing which sets them apart? Are they more proactive at using digital technology to promote themselves?
- In your opinion, is it necessary for hairdressing training institutions and academies to promote blended learning options and online learning? Is it of value to the industry for hairdressing academies to provide some basic training in digital literacy for their students?

8.5 eLearning at industry competitors

edusearch
Providers Resources Kids & Parents Articles International

<http://www.edusearch.co.nz/dev/articles.php?descriptions=enabled&art...>

English - Business & IT Courses
3 Campuses: Takapuna - Botany - Manukau
www.nzie.ac.nz / info@nzie.ac.nz
Don't forget to join us: www.facebook.com/nzieeducation



Servilles Academy Continues to Celebrate Success

Author : LC

September 2011

Servilles Academy Continues to Celebrate Success **Servilles**

Academy of Hairdressing has received three of the four awards at the annual New Zealand Association of Private Education Provider's awards in Wellington!

Tutor of the Year: Hairdressing Tutor, Glenn Mercer
Support Person of the year: Education Manager, Maryke Botes:
Student of the Year: Vladimir Moiseev
Fellow Servilles student Sean Peau receiving runner up.

With many initiatives to support students and their learning holistically, Servilles Academy is dedicated to providing quality education and student experience. Winning at the NZAPEP Awards combined with the win in June of the Australasian Education Organisation of the Year at the Schwarzkopf Hair Expo in Sydney is confirmation of the academy's excellence and commitment to providing highly skilled graduates for the industry.



Education Manager Maryke Botes has pioneered new student support and flexible learning models at the academy. "Nothing worthwhile comes easy, hard work is the only way to accomplish results that last. It was a team effort and I couldn't have done it without the support of the amazing people working at Servilles academy. What a wonderful company to work for!" says Maryke.

Servilles Academy has continued its dedication to revolutionising hairdressing education through a range of developments this past year.

New premises: Moving to a three level, 2,725 m2 premises in Auckland's CBD resulted in a larger, more effective learning environment. Opened by Rt Hon. Helen Clark (a former NZ Prime Minister who holds the third highest position in the UN), the media coverage included primetime and breakfast on NZ's leading news channels.

Technological advancement: Servilles understands the importance of staying current with learning and teaching. The Academy's computer lab, part of its e-learning strategy, was designed for students to create e-portfolios, complete and submit theory and assignments. The Academy is developing demonstrations and lessons exclusively for online use (podcast) so students can access lessons remotely from iPhones, laptops or at home on their personal computers.

E-LEARNING: Designed to complement traditional face-to-face delivery and achieve blended learning - a combination of in-classroom experiences combined with online learning modules. Online learning is self-paced and gives students a chance to speed up or slow down as necessary, as well as being self-directed to allow students to choose content and tools appropriate to their differing interests, needs and skill levels. With blended learning comes greater flexibility, giving students the freedom to work and learn at their own pace without the unyielding time restrictions of traditional learning. Because e-learning provides access to learning materials at any time, students have the flexibility to schedule around families, jobs and other activities.

E-PORTFOLIOS: E-portfolios are now an integral part of the Foundation and Graduate programmes. Students use their e-portfolio as a platform for self-expression and creativity and to manage their professional development and personal. This includes a personal blog to facilitate the students' reflection on their own learning progress, leading to more awareness of learning strategies and needs. The e-portfolio also provides a social networking facility, so students can create and maintain a list of peers; and a resume builder, which allows the students to create a digital curriculum vitae by entering a variety of information, including employment and education history, certification and awards, images of creative work and photoshoots. In summary, a Servilles e-portfolio is a collection of a student's journey and showcase of their amazing skills, talent and competencies.

8.6 Wireless network considerations

Hello

Thanks for the opportunity to provide you with some information regarding your interest in rolling out a Wireless Network for your School.

I've have been involved in a project not that dissimilar to what you are anticipating for your school. Whereby a wireless network was rolled out St Cuthbert's College in Market Road Epsom as the Senior IT Engineer at the time for the College I was involved with tender selection and the final fit out and commissioning of the wireless network at St Cuthbert's. This was a fairly large wireless network spanning 10 Buildings with 25 Access Points, we had 600 Junior school students connecting to the network with Apple iMac Laptops and 600 Senior girls connecting using Toshiba Laptops in the Senior School.

Based upon my experience with Wireless networks of a size supporting 500+ users and bearing in mind the need for good internet wireless speeds to students and good levels of redundancy and content filtering I would like to make the following points for discussion.

Point of Consideration

1. Contention this is ratio of users to access points based upon your initial figure of 500 users I would anticipate 500 Users Over 25 Access Points would give a ratio of 25:1 25 users per access point
If the access point is delivering 300Mbps then in theory 25 users could reach speeds of 12Mbps each. Wireless standards today support 11Mbps to 150Mbps a,b,g,n.

2. Data Content it's important to define at this early stage what content will be delivered across the wireless network will it be internet web pages, email, applications, files, video, audio or high bandwidth intensive streamed media. As this will help decide the correct ratio of users to access points along with the core infrastructure required to deliver the content to the students.

Fibre is the preferred choice of network core infrastructure when the need for high bandwidth and internet speeds is required. Cat6 Gigabit Ethernet is another option somewhat cheaper but delivers/handles less speed/traffic when compared with Fibre.

3. To assist with timely data delivery and to maximise the data plan of the school. Proxy servers are often implemented to facilitate delivery of frequently accessed media, content and data from the internet without the need to keep getting this information of the internet each time.
4. Wireless vs Cabled in some cases it make more sense economically and practically to provide wired access to the internet in classrooms rather this overcomes the limitations of wireless internet and allows for faster data delivery of internet content too students.
5. Cabling to buildings, classrooms the physical location of the classrooms buildings is important to consider as location will determine what grades of cable and how the cable will be run or laid.
Underground if the buildings are more then 100 meters apart or cable spans between buildings or through walls

and cavities within buildings, cost can be a big consideration here. The right cabling at this point is crucial to the success of any data network.

6. Network Equipment Routers, Switches, Access Points need to be reliable, manageable and highly configurable not to mention very secure. The selection of the right equipment is an important consideration in the planning of your network.
7. Content filtering Preventing your users from accessing or coming across undesirable or objectionable content whilst using your schools wireless/wired network is another very important consideration. There are many software and hardware choices available to fulfil this requirement. With budgets to suit.

Some Questions for you

1. Who is your Internet Service Provider? And What type of Internet Connection do you have?
2. Are you on a data plan and if so what are its limitations i.e. 20Gb/Month?
3. Do you have existing network cabling onsite at your school? What is it? And Where does it go? What areas of the School does it cover?
4. Do you have any servers at your school?
5. Do you have any existing network equipment? Hubs, Switches, Routers, Access Points? Make Models?

Kind Regards,

Owen Milburn
(Dip BC, NCBC, MCP, MCDST, MCNPS)

Senior Systems Engineer
0800 84 33 88
www.futurepc.co.nz



Hi Curtis,

Thank you for your time, as per phone discussion please find the below prices of the material & labour required for a installation that we will most likely use

Option Wireless:

Installing cable and labour for 15 hours	\$1470	
200 metres Cat 5e cable	\$480	
20x Jack Cat 5e RJ45 Socket	\$276	
20x PDL grid plate	\$194	
6 x Wireless AP's		\$1680
Optional:		
Management Software to control Access	\$1800	
Total		\$5900+GST

Option Wired only:

Installing cable and labour for 25 hours	\$2450	
400 metres Cat 5e cable	\$960	
40x Jack Cat 5e RJ45 Socket	\$552	
40x PDL grid plate	\$388	
Total		\$4350+GST

Like I said this is not a quote, this is a pricelist of the material we will most likely require to build a network with the given info we have received.

If you have any further questions, please feel free to get in touch. If you are interested in proceeding, you can either email or call. Thank you again for your enquiry.

PS. We're currently running several specials for new clients. If you proceed this week, we can offer you one of the offers below:

- ✓ get a free \$20 gift voucher with any purchase over \$250.
- ✓ get 30min of a technicians time helping you with any IT issue, via RescueNet our remote support tool. Value \$56.35.
- ✓ we can organise a free courier , to pick up your faulty laptop from your home or office and get it delivered to Future PC's head office for repairs.

Best Regards,

H. Engelbrecht

Herman Engelbrecht

ICT Customer Support Officer

0800 84 33 88

www.futurepc.co.nz

8.7 Sourcing ICT hardware

BenQ MZ660P projectors

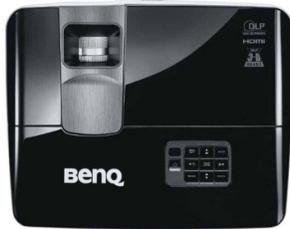
DESIGNED FOR EXCELLENCE | **MX660P**
 Future Proof • Excellent Image Quality • Affordable



Features

- Native XGA (1024 x 768) Resolution
- 3000 ANSI Lumens / 5000:1 Contrast Ratio
- USB Reader & Display, HDMI x1
- Long Lamp Life, Closed Captioning
- 3D-Ready, Wireless Display (Optional)

Top / Front View



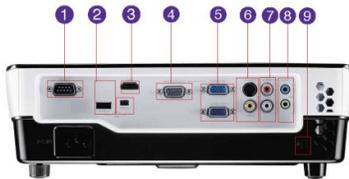
Top



Front

Input and Output Terminals

Back



- | | |
|-----------------------|----------------------|
| 1 RS-232 x1 | 6 S-Video / Video x1 |
| 2 USB Type A & Mini-B | 7 Audio R/L x1 |
| 3 HDMI x1 | 8 Audio In & Out x1 |
| 4 RGB Output x1 | 9 Kensington Lock |
| 5 RGB In/Component x2 | |

Specifications

Native Resolution	XGA (1024 x 768)
Brightness	3000 ANSI Lumens
Contrast Ratio	5000:1 (Full on/Full off)
Keystone	Manual Vertical +/- 40 Degree
Aspect Ratio	4:3 Native, 16:9 Selectable
Color	Full 1.07 Billion colors palette
Lens	F = 2.56 ~ 2.8
Zoom Ratio	Manual Zoom, 1.1:1
Image Size (Diagonal)	36.2" - 300"
Throw Ratio	1.86 to 2.04 (53"@ 6.5 Feet)
Lamp Life	210W, 3500/5000 hours (Normal/Economical Mode)
PC Compatibility	VGA (640 x 480) to UXGA (1600 x 1200)
HDTV Compatibility	480i, 480p, 576i, 576p, 720p, 1080i, 1080p
Video Compatibility	NTSC, PAL, SECAM
Horizontal Frequency	31-99 kHz
Vertical Scan Rate	23-120 Hz
Input Terminals PC/AV	Analog RGB/Component: D-Sub 15 Pin x2 USB Type A x1 (Reader) USB Type Mini-B x1 (Display) HDMI (v1.3) x1 S-Video: Mini Din 4 Pin x1 Composite Video: RCA x1 Audio L/R: RCA x2 Stereo Mini-Jack x1
Output Terminals PC/AV	Analog RGB: D-Sub 15 Pin x1 Variable Audio Out: Stereo Mini-Jack x1 Speaker: 2W Speaker x1
Control Terminals	Serial Connector: RS-232 9 Pin (Male) USB Type Mini-B (Page up/down)
Dimensions (W x H x D)	12.24" x 4.09" x 9.6"
Weight	5.84 lbs (2.65 kg)
Power Supply	100 to 240 VAC, 50/60 Hz
Power Consumption	326W (Typical), Standby <1W
Noise Level	30/26 dBA (Normal/Economical Model)
Display Languages	Bulgarian/Croatian/Czech/Danish/Dutch/English/Finnish/ French/German/Hungarian/Italian/Japanese/Korean/ Norwegian/Polish/Romanian/Russian/Simplified Chinese/ Spanish/Swedish/Turkish/Thai/Traditional Chinese
Picture Mode	Dynamic Mode/Presentation Mode/sRGB Mode/Cinema Mode/User 1 Mode/ User 2 Mode
Functions	3D-Ready/USB Display & Reader/3D Color Management/ My Screen/Digital Zoom 2x/Closed Captioning/Quick Cooling/Panel Key Lock/Variable Audio Out/Window 7 Compatible/Wireless Display (Optional)
Accessories (Standard)	Quick Start Guide/User Manual (CD)/Remote Control/ Power Cord/VGA Cable/Soft Carrying Bag
Accessories (Optional)	Presentation Plus/Spare Lamp Kit/Universal Ceiling Mount
Lamp P/N	5J3T05.001
Limited Warranty	3-Year Parts/Labor plus 1-Year or 2000 hours of lamp life

MX660P_DM_BQus_10-18-11



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QUOTATION

QUOTE **20553**

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AUDIO GENERAL INCORPORATED
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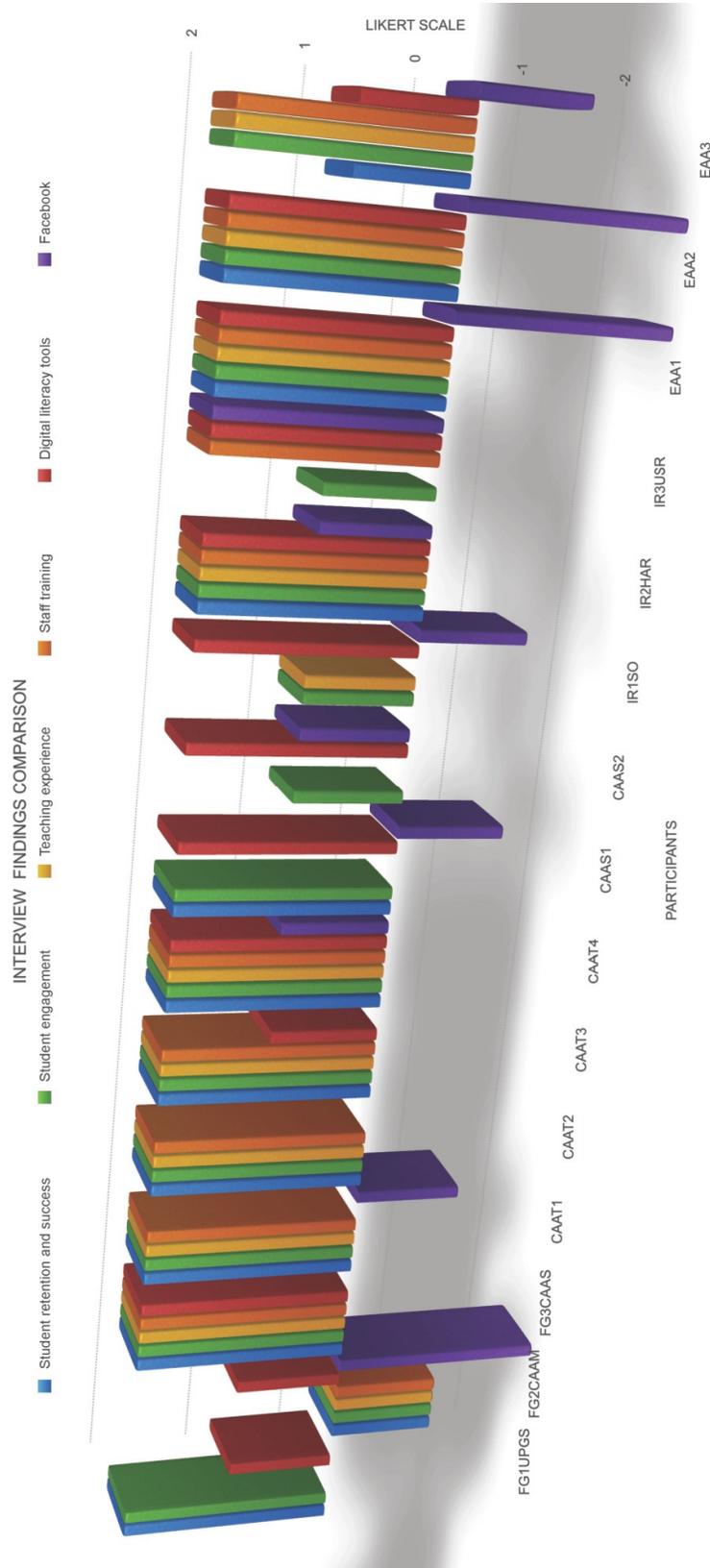
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BILLING ADDRESS				SHIPPING ADDRESS				
Auckland 0600 09 8277958 zad1@xtra.co.nz				Auckland 0600 09 8277958 zad1@xtra.co.nz				
QUOTE NO	CUST NO	QUOTE DATE	VALID UNTIL	SALES REP	TERMS	TAX GROUP		
20553	48333	May 22, 2012	Jun 15, 2012	PVH		Out-Of-State		
ITEM	DESCRIPTION			QTY	WHS	SHIP	PRICE	EXTENDED
0601-8526	InFocus IN114 DLP Projector, XGA, 2700 Lumens, 3D ready, 5000 Hr Lamp			35	PA	To Be Added	389.00	13,615.00
0601-6731	BenQ MX660P DLP Projector, XGA 3000 Lumens, HDMI input			35	PA	To Be Added	475.00	16,625.00
0601-2076	Panasonic PT-LB3U LCD Projector, 3200 Lumens, Native XGA Resolution, Wired Network, 5000-Hr Lamp, Carrying Bag Included, 3-Year Warranty			35	PA	To Be Added	499.00	17,465.00

Dell Vostro 3550 Laptops; Sourced at Dell website.

Sony Bravia 46" 1080 HDTVs, Ipad2 and Apple TV ; Sourced at JB HiFi, over the phone quotes

8.8 Figure 11: Final comparison of research question findings



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