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Tertiary students' views on the usefulness of eportfolio support services

A thesis presented in partial fulfilment of the requirements for a degree of

Master of Education in E-Learning

at Massey University, Manawatu,

New Zealand.

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2011

Abstract

The benefits of eportfolios as a tool for learning and assessment have received recognition from numerous writers, researchers and practitioners internationally. Eportfolio use has been found to support constructivist, social and self-directed approaches to learning and assessment. Yet there is a lack of literature and research on how to serve students' needs for support as they develop skill in using eportfolio tools. Eportfolio technology is in itself relatively new to many students, as is the very concept of portfolio use and its potential to enhance and support learning. There is also wide variance in the approaches taken to eportfolio use in higher education with many providers focusing on the summative assessment product or showcase that Barrett (2011a) and others (Shulman, 1998; Zubizarreta, 2004b) argue is less important than the formative process or workspace of eportfolio use. Where the eportfolio is seen as simply a technology vehicle for presentation the student may not benefit from the reflective practice, collaboration and feedback that studies show are key advantages of eportfolio use.

This study applies a mixed methods approach to explore the relationships between student use of support services and their attitudes and experience with digital technologies. Both quantitative and qualitative data was collected concurrently from surveys, frequency of usage logs, support emails and peer support forums. To contextualise the study, support services were designed that offered a range of types of support, catering to diverse student preferences and needs for support. Data was collected to identify student attitudes, experiences and practices in using each of these support services, and their impressions and intentions with regards to portfolio use and eportfolio skills development. The aim was to provide insight for educators and institutions, course providers and support providers, on how to effectively support students according to their needs and preferences for eportfolio use, particularly in settings where eportfolio technology is new to students and where related concepts such as reflective practice may also be unfamiliar.

Key findings indicate that student attitudes toward the true value of eportfolio use for their academic and professional practice impact on their use of support services and their perceived development of eportfolio skills more than any other factor. In particular, students with the impression that eportfolios have potential to support and enhance subject knowledge are more likely to use most support services offered, more likely to support other students, and more likely to have an intention to continue using eportfolios in the future. As literature supports the view that eportfolios can enhance and support learning the researcher sees this finding as central to an effective strategy for support services and a general strategy for implementing eportfolio use in tertiary programmes.

Acknowledgements

First and foremost I wish to thank my fiancée, Jeannie. Her support and patience has not only made this journey easier, in every way she has made it possible.

I also wish to thank the participants in this study for their honest and open contributions. Based on their experiences and their feedback this year it is my hope that the field of eportfolio use can be strengthened and supported, starting from this groundwork for effective strategies on implementation and support of eportfolios in higher education.

I cannot thank my supervisors enough, though I wish to do so here in some small way.

Dr. Mandia Mentis provided so much more than supervision; her advice, encouragement and confidence gave shape to this process and gave me direction in study that has brought about a more comprehensive research project than I could have anticipated just a year ago.

Dr. Maggie Hartnett has also guided me above and beyond what I anticipated or expected. She gave patient, consistent, meticulous support from a depth of knowledge in all areas of my study; she resolved all of my questions promptly and in detail; and always informed me with clarity on what steps needed to be taken to improve or correct this work.

Although she was not an appointed supervisor, I feel very fortunate to have had the help and support of Philippa Butler. Her prompt and patient expert advice on all matters quantitative; her facilitation of surveys; and her processing of raw data have been as indispensable as ongoing supervision.

Finally, I also express my gratitude to Massey University for the award of the Massey University Masterate Scholarship, which has enabled me to complete this study on a full time basis with confidence and security for the future.

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1 Introduction

An eportfolio is a type of technology tool for learning that is seen as having the potential to effectively support modern approaches to education. A key benefit of eportfolios, according to experts on their use such as Barrett (2011b) and Zubizarretta (2009), is their potential to encourage and enable learners to engage in reflective practice (Schön, 1991; Shulman, 1998; Zubizarreta, 2004a), formative assessment for learning (Ministry of Education, 2011; Rate, 2008), and collaborative activity. Defined in more detail in chapter 2, eportfolios can be characterised as the representation of an individual's learning process through the use of digital tools. An important distinction here is that the word "representation" in this context can be read either as a noun or as a verb (Ministry of Education, 2011, p. 7); this implies that the educational value of a learner's eportfolio is found in the process of creating it as well as, or more than, in the end product that is created for summative assessment.

Research and practice has found use for eportfolios in formal schooling from primary through secondary level (Acker & Halasek, 2008; Rate, 2008), tertiary education (Miller & Morgaine, 2009; Seldin, 2009; Yancey, 2009b), vocational training (D. Anderson, Gardner, Ramsbotham, & Tones, 2009; Bashook, Gelula, Joshi, & Sandlow, 2008), and personal lifelong learning (Barrett & Garrett, 2009). This broad-based potential for eportfolios in education underscores the suitability for eportfolio use in teacher education, particularly postgraduate education for practicing teachers; the tool is not only suitable for the learner's own development, but has additional relevance as a professional tool for their classroom practice (Herner-Patnode & Hea-Jin, 2009).

Eportfolio use is particularly suitable as a study tool for educators in New Zealand. One of the most widely used software systems for eportfolio use, Mahara (2010), was designed and developed in New Zealand in a collaboration between universities, private businesses, and government. The New Zealand Ministry of Education funds the development and hosting of two eportfolio tools (Dataview, 2011; Kineo, 2011) for primary through secondary school use and one of these hosts, called MyPortfolio (Kineo, 2011), uses the Mahara software system. Educational technology experts (Ministry of Education, 2011; Rate, 2008; Wenmoth, 2011) have highlighted clear links between the researched benefits of eportfolio use and the aims and objectives of the New Zealand Curriculum (Ministry of Education, 2007). This study focuses on the use of the MyPortfolio eportfolio tool in a tertiary education setting in New Zealand, as outlined in the next section.

1.1 Research setting

The research setting for this study, described in more detail in chapter 3, was an online distance postgraduate programme in specialist teaching. The sample population was comprised of practicing specialist teachers whose professional context involved working within or alongside New Zealand schools. The Ministry-funded eportfolio tools (Dataview, 2011; Kineo, 2011) were already available to these practitioner-students through their employment in the education system, yet the majority did not realise they had access to eportfolio tools, or indeed what eportfolio tools were and how they might use them professionally. Eportfolios were considered by the course providers as an approach to learning and assessment that suited the methodology of the course, and they aimed to provide students with a comprehensive range of support services to assist in the development of skills required for eportfolio use in the course.

The final assessment in a compulsory course module was based on the content of a portfolio showcase that students could choose to present as an eportfolio online. Assessment was based entirely on the content of the eportfolio and not its form of production; therefore eportfolio skills were not a graded course component and the development of these skills was not allocated course credit or scheduled in as course work. In this sense, students were expected to be self-directed in their development of eportfolio skills, and the range of support services provided to them was intended to enable this self-directed learning process.

1.2 Rationale for study

Numerous recent studies are available in the field of eportfolio use in adult education settings (see for example Bolliger & Shepherd, 2010; Chatham-Carpenter, Seawel, & Raschig, 2010; Peacock, Gordon, Murray, Morss, & Dunlop, 2010). Some key theorists in e-learning and technology in education have focused on the development of eportfolios as a promising tool for social and constructivist approaches to learning (Conole, 2007; Gray, 2008; Laurillard, 2004; Wenger, White, & Smith, 2009). However, there is currently a lack of research into the types of technology support services that institutions can provide for their students when eportfolio use is introduced as a course component or assessment tool. The researcher suggests that in courses designed to include eportfolio assessment activities a lack of effective support services for the development of skills for eportfolio use may diminish the benefits that students can draw from this approach to learning and assessment. Yet the field of education does not at the time of writing have access to tested guidelines on the steps that course providers and support service providers can take to ensure that students who are developing skill in eportfolio use receive the support they need in a format they respond to.

1.3 Research aim, intentions and questions

Based on the rationale above, this study focuses on student use of support services for eportfolio skills development and how this use impacts on or is impacted by the students' attitudes toward portfolios and their experience with digital technologies. The researcher intends that this thesis can form an inroad to further study on effective strategies for support needs in student use of educational technologies and that it can offer some practical utility for course providers as they implement eportfolios as a learning and assessment tool.

Research aim

The overruling aim of this study is: *to explore the views of students in a post-graduate specialist teaching programme as to the usefulness of a range of support services for eportfolio use.*

However, the researcher hopes that findings and recommendations of the study can be utilised by researchers and educators outside of the particular setting of this study. The recommendations may provide relevant information for educators and institutions in other higher education contexts where eportfolios are employed as a tool for learning and assessment, and potentially for support services related to other educational technologies.

Research questions

To facilitate a systematic approach to the research aim above, a set of research questions were formulated. The collection of data was conducted using these research questions as a framework and subsequently the reporting of findings from data analysis in chapter 4 and discussion on these findings in chapter 5 each follow the research questions as subheadings.

The research questions are:

- 1. Which support services are utilised most?**
- 2. Do expectations of support service usefulness change significantly over time?**
- 3. In what ways is the use of support services associated with general demographic and background factors?**
- 4. Are there significant relationships between experience with digital technologies and attitudes toward portfolio use?**
- 5. Are there significant relationships between participants' experience and attitudes with eportfolios and digital technologies compared with the types of support services they utilise?**
- 6. Are there significant changes in participant experience and attitudes toward eportfolios over time?**

1.4 Structure of the thesis

The thesis is organised in six chapters. The first chapter (1), which this section concludes, has introduced the background, setting and rationale for this study as well as its aim, intentions and guiding research questions. The following chapter (2) presents a review of literature related to this study, including a studied definition of eportfolios, modern approaches to eportfolio use generally, their application to adult education, and research on providing support services for technology use. Chapter 3 explains the methodology of this study, including a detailed description of the research setting and sample and the approach taken to providing support services, as well as the methods employed in studying participants' use of them. Next, chapter 4 reports the findings of analysis for all data collected, arranged in sub sections according to the six research questions. Then chapter 5 provides in depth discussion on the findings for each research question: examining the implications of these findings as well as their practical relevance for course providers and support providers. Lastly, chapter 6 concludes the thesis with a summary of key findings that directly support the central research aim, to explore the views of students in a post-graduate specialist teaching programme as to the usefulness of a range of support services for eportfolio use, and from this make recommendations for educators on providing effective support services for eportfolio use by student-practitioners in a postgraduate specialist teaching course.

2 Literature Review

In this section, the concepts of portfolio and eportfolio use in education are defined and situated for the context of the study. A working definition of eportfolios is provided, with some background on the development of theory and practice on eportfolio use. Current research is reviewed on eportfolios in adult education and aligned with literature on support service approaches followed by a review of recent theories on eportfolio use, education, and support services. Connecting these areas of literature, the reader can form a comprehensive view of the context of this study.

2.1 ePortfolios: definition and background

A portfolio is a collection of evidence that is gathered together and presented “to show a person’s learning journey over time and to demonstrate their abilities” (Butler, 2006, p. 2). An electronic portfolio or eportfolio is an *electronic* collection of such evidence (Barrett, 2011a). This definition can apply to any electronically stored portfolio, including those stored on optical disc or on a desktop computer and including those that are simply a repository for printable documents that could equally be presented in hard copy. However, the term ‘eportfolio’ is now most often used to denote online storage and interactive capability: where the portfolio is hosted on a website and retrievable via a unique user account, and where it is designed to incorporate some degree of interactive media, including hyperlinks, images, video clips and audio feeds. Abrami and Barrett (2005, introduction para. 1) thus define the electronic portfolio as “a digital container capable of storing visual and auditory content including text, images, video and sound”.

Eportfolios can be produced for personal and professional development, job applications, work-based learning, assessment, lifelong learning, or to showcase technical progress (Joyes, Gray, & Hartnell-Young, 2010). For this study, the context of eportfolio use and support is adult education; in particular the participants in this case are postgraduate students, and all of the participants are practitioners in specialist education. To background this specific research setting the review of literature has canvassed a range of approaches to eportfolios and adult education, with key perspectives contributing to form a framework of relevant knowledge on eportfolio use. These perspectives, discussed in more detail below, include the teacher’s academic and administrative portfolio (Seldin, 1989, 2004; Shulman, 1988; Zubizarreta, 1994), the predominantly reflective learning portfolio (Zubizarreta, 2004a, 2009), primary through secondary school (K-12) student and teacher eportfolios (Barrett, 2011a; Gray, 2008, 2010; Moersch & Fisher, 1995), as well as the portfolio as a tool in adult higher education (Laurillard,

2004; Shulman, 1998; Yancey, 2009a, 2009b). Each perspective highlights certain aspects of eportfolio use that were relevant in the researched case: with the adult practitioner-student as specialist teacher.

In this study, eportfolios or electronic portfolios are considered as a subset or type of portfolio. An eportfolio is a resource that can serve dual roles: categorised in this study as demonstrative and reflective. These functional categories are based on distinctions made by Barrett (2011) between the showcase (demonstrative product) aspects of an eportfolio and the workspace (reflective and collaborative process) aspects. Barrett’s perspective is characterised in her depiction of two “faces” of eportfolios (see Figure 2-1). Barrett’s two faces approach acknowledges the potential for eportfolios to incorporate both showcase and workspace roles. Other theories of portfolio and eportfolio use (Seldin, 2004; Shulman, 1998; Zubizarreta, 2009) have stressed the application of one type or function of portfolio for one given situation, whereas Barrett’s approach emphasises that both roles, workspace and showcase, should be incorporated into one eportfolio. For this study, the researcher adopted Barrett’s approach as a basis for development of eportfolio support services and as a distinction for analysing data on student attitudes and usage of these services.

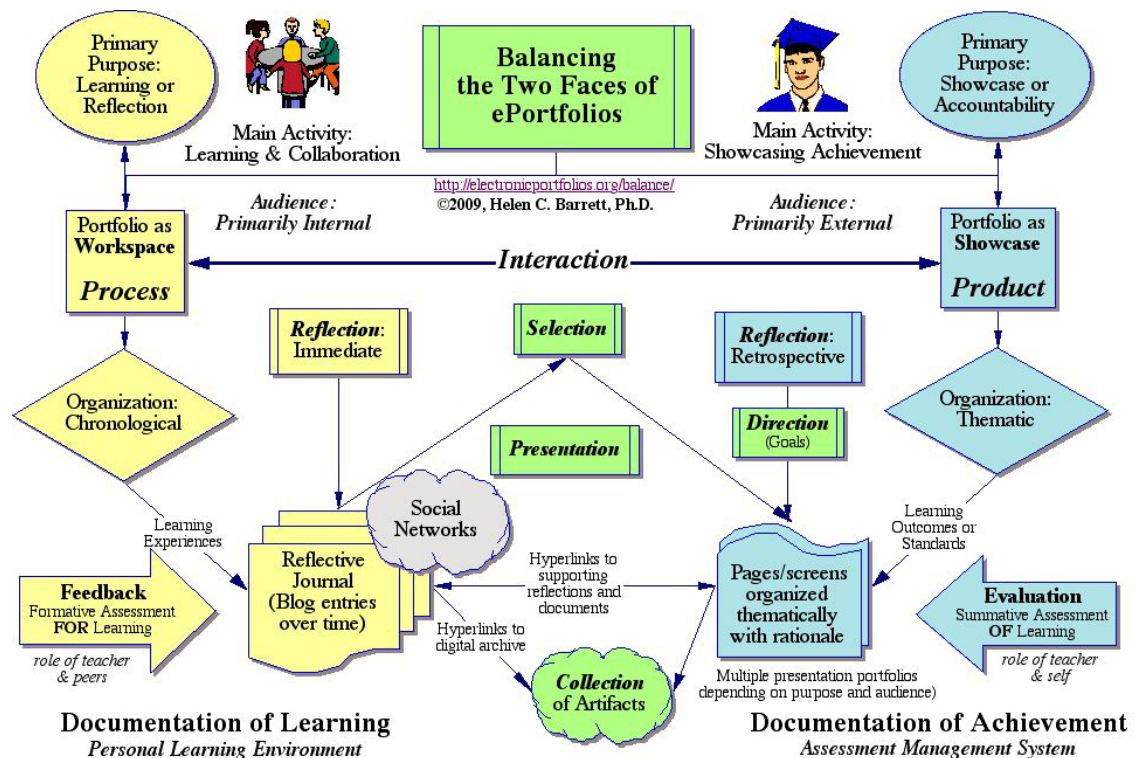


Figure 2-1: Balancing the two faces of ePortfolios (Barrett, 2009)

2.1.1 The teaching and learning portfolio

Based on research into educational reform in the 1980s, Shulman (1987) suggested that portfolios containing self-selected evidence of teaching experience and practice could provide an authentic approach to teacher performance evaluation. The teaching portfolio gave teachers a tool to put forward the testable as well as the untestable skills in their repertoire. Specifically, their foundation of knowledge in the subject taught and in the subject of teaching, as well as the intuitive practices that turn this knowledge into a living skill in the classroom. Shulman's portfolio (1988) provided the potential for teachers to self-select and represent a wider range of skills than did other evaluation formats. This included the presentation of 'pedagogical content knowledge', summarised as "the blending of content and pedagogy into an understanding of how particular topics, problems, or issues are organized, represented, and adapted to the diverse interests and abilities of learning, and presented for instruction" (Shulman, 1987, p. 8, as cited in Hume & Berry, 2011, p. 2). Seldin (2004) reiterated these potentials for presentation and provided guidelines for the production and design of portfolios. Seldin's teaching portfolio primarily fulfils the purpose of showcasing performance for staff evaluation. Shulman's (1998) description of the portfolio referred to the additional benefits of reflection in, on and for practice, drawn from Schön (1991), yet the significance of reflection became a central focus of Zubizarreta's teaching portfolio (1994, 2004b). With the acknowledgement that the key strengths of the portfolio are in its provision of a context for reflection, Zubizarreta's depiction of the teaching portfolio took on more depth than an administrative tool and showcase for evaluation. The teaching portfolio discussed by Zubizarreta and Seldin (2004) at the turn of the century became an active component of skills development and a resource for developing the reflective narrative of the practicing teacher's learning journey.

The suggested progression from demonstrative portfolios for teachers to formative portfolios for improving teaching leads naturally to portfolios for improving learning and portfolios for students. As Zubizarreta (2004a, 2009) presents the case for portfolios as a powerful tool for learning, reflection remains the key to their effective use: a point that is now supported by both Shulman (1998) and Seldin (2009). Their visions of the teaching portfolio have seen it evolve into a tool for both teaching and learning, for administration and practice. In education, a portfolio that serves both teachers and learners, that enables administrative functions and the development of pedagogical content knowledge through reflection on authentic classroom practice and collaboration with academic peers, is particularly powerful.

2.1.2 The two faces of eportfolios

For Barrett (2011a), eportfolios are seen as potentially fulfilling two key user objectives, or as having two 'faces'. On one face, eportfolios are a workspace for learning and collaboration, enabling immediate reflection and social networking with emphasis on reflective journals and formative assessment for learning. On the other face, eportfolios are a showcase for accountability and achievement, enabling retrospective reflection with emphasis on the thematic organisation of pages and summative assessment of learning. The distinction made by Barrett suggests that electronic tools have provided a context whereby the teaching portfolio and the learning portfolio can complement each other as one object or as one process. Eportfolios can be active tools for authentic teaching *and* learning, for evaluation *and* development equally. Figure 2-1 above (Barrett, 2011a) displays the two contrasting, yet complementary faces of an eportfolio and their associated processes.

A similar distinction of showcase portfolios versus workspace portfolios can be seen in the contrasts between Seldin's teaching portfolio (2004), particularly in its early inception as largely showcase, versus Zubizarreta's learning portfolio (2009) as predominantly a workspace. The point that Barrett (2011a) makes, however, is that eportfolios for teaching and learning can and should achieve both of these goals, and that the educator should take intentional steps to balance these two faces of eportfolios according to the needs of the learner in context. Electronic tools afford the means and opportunity to create eportfolios that exhibit this sense of balance: by utilising dynamic functions like social interaction, active feedback, immediate reflection, multimedia presentation and interactive design. Yet this opportunity can only be realised if the user has the will and ability to utilise the range of functions. In order that learners may achieve truly balanced eportfolios in practice, Barrett introduces three stages or actions that they can take in the development of their eportfolio and of the skills for using their eportfolio. These practical stages are relevant to any support service that aims to enable student development of eportfolio skills.

2.1.3 Three stages of eportfolio development

The three actions involved in developing an eportfolio according to Barrett (2011a) are storage, process, and product. They are seen as not only distinctions between stages in the use of eportfolios, but also as graduated levels in the development of the learner's skill and understanding. Storage involves collecting and storing relevant artefacts. These stored artefacts are then applied to the process stage as elements in the design of the eportfolio for presentation and continued use. The process stage includes collaboration and personal reflection, which Zubizarreta (2009) and Seldin (2009) agree are key strengths of the learning

portfolio. The third stage is where the product of a showcase eportfolio is created in the form of organised pages and thematic selection of artefacts.

Support services for this study were designed with a similar framework portraying the process of eportfolio development in three stages (see Figure 2-2). Barrett's categorisation of storage, process and product is general and meant to apply equally to eportfolios that are a congregation of separate digital and non-digital tools (Barrett, 2011b) as well as those built with custom eportfolio tools (Mahara, 2010; Pebble Learning, 2011). The context of eportfolio use in the studied programme was specific to the website 'MyPortfolio' (Kineo, 2011), a purpose-built eportfolio hosting website using the all-in-one eportfolio software platform 'Mahara' (Mahara, 2010). Participants in this research were students in a postgraduate tertiary course for specialist teachers delivered via a blended (digital and face to face) format.

The stages guiding support service development in the context of this study were *store*, *present*, and *access*. These stages were intended to follow the methodology for eportfolio development inherent in the design and layout of the MyPortfolio website. While there are similarities between these stages and Barrett's three stages, there are also key differences owing to the specific format and structure of the MyPortfolio approach to eportfolio development. *Store* involves collecting and saving artefacts and reflections on those artefacts; this corresponds with Barrett's storage stage and incorporates the reflection elements of Barrett's process stage. *Present* involves arranging these artefacts and reflections in pages for presentation to others; this corresponds equally with Barrett's process and product stages. *Access* involves selecting individuals or groups to be granted access permission for the presentation pages and networking in groups to view other users' work; this corresponds to some degree with Barrett's product and process stages, yet focuses also on security settings unique to the Mahara software environment on which MyPortfolio is based.



Figure 2-2: Screenshot from instructional video outlining Simpson's (2011) three stages of portfolio development for the Mahara platform

User control over the selection of content and its presentation format is one of the core strengths of eportfolio use as an approach to learning and assessment as it encourages an ongoing process of formative self-assessment (Diller & Phelps, 2008; Rate, 2008). In MyPortfolio, the user is granted an additional level of control whereby they manually dictate who is granted permission to access and view their portfolio and their work that it contains. This control is represented in the *Access* stage in support materials for the research setting (Simpson, 2011). Furthermore, as the system allows users to create multiple eportfolio presentations (called *Views*) the user is able to control access permissions for each *View* separately (Kineo, 2011). This practice is in contrast to some blog-based eportfolios (see for example Google, 2011; WordPress, 2011) where the user can produce only one presentation for each user account and where this work can be either open to unrestricted public viewing on the internet or visible only to the user. In the context of this study's research setting, where the students involved were also practicing teachers, the confidential nature of many students' reflections on classroom experiences highlighted the importance of this security feature.

2.2 Current research on ePortfolios in adult and teacher education

The definition of "eportfolio" can include many different online and offline tools or amalgams of these tools. For this reason, careful comparison of any two studies on eportfolio use will often find that the "eportfolios" in each study are entirely different objects, involving entirely different processes. Bolliger and Shepherd (2010) for example researched student perceptions of eportfolio integration in online courses where the eportfolios were template-based web sites created by students using Google Sites. In quite a different context Diller and Phelps (2008) assessed the application of an open-source eportfolio system for information literacy

courses. From the basis of a simple eportfolio tool integrated within the institution's learning management system, Wang (2010) made specific changes to the eportfolio system to optimise its suitability to the research context. In addition to any other key differences between these studies, any consideration of the three as representative of a single field such as eportfolio use should take into account the significant differences between the approach each study makes to defining and conceptualising the eportfolio.

The eportfolio studied in this case is based on the Mahara open source software platform (Mahara, 2010), which draws together a range of functional tools into an integrated toolkit. Using this toolkit the student produces, stores and presents their eportfolio in one online location. They can create multiple portfolios for multiple purposes and audiences, and they have individual manual control over who has permission to access each portfolio. Although the specialist teaching programme in this case was in its first year, eportfolios had been used previously in other courses within the university with varying rates and measures of success. Particularly in teacher training, university staff reported unexpectedly low levels of engagement with eportfolios from students in some courses. The course designers for the specialist teaching programme intended to cultivate engagement in this course through planned support services for students' development of skill in eportfolio use.

A selection of literature deals with eportfolio use and institutional implementation of eportfolios as integrated packages; two particular examples provide a clear contrast in approaches with important lessons from both sides for the current study. In one example, Florida State University adopted a university-wide eportfolio named the 'FSU Career Portfolio' (Lumsden, 2007). In a five-year review of this programme, Lumsden highlights a range of uses that have been accredited to the FSU Career Portfolio, including uses that were expected and part of the rationale for the programme and uses that came about gradually as unexpected benefits. FSU Career Portfolios were used for skills identification, planning, reflection and personal growth, as a marketing tool, for professional growth, accreditation, student evaluation results and employer evaluation results. Seemingly, the Career Portfolio was used primarily as a showcase: the learning processes involved are not based on the subject content of courses in the university degree, but are based on the identification of "career skills" (Lumsden, 2007, p. 4), general self-directed reflection, and basic digital literacy. It is not surprising then that the review makes no mention of support services for students developing the skills needed to produce their portfolio aside from a series of linear scripted tutorial programs that walk students through the steps needed to complete a chosen task. The implication of this focus is that while students are expected to informally learn from the

system how to practice reflection as well as personal and professional growth, learning *about* the system is viewed as a simple matter of following the technical steps needed to operate the technology vehicle.

In a mixed method study, Wang (2010) compared performance and feedback from students using an eportfolio system called *netfolio*, which had been designed specifically to enable community of practice approaches to learning and assessment (Wenger, 2006) through the active collaboration of students on socially constructed eportfolio tasks. These results were compared with performance records, from the same course with the same tutor, for past year students who had used a “standard e-portfolio assessment tool” (Wang, 2010, p. 268). The study found that students in the *netfolio* study group were more engaged with the learning process, more reflective on their own practice and others’ practice, more collaborative in their work, and performed better in assessment tasks. Class discussion increased in this group while the tutor’s role involved less direct contribution in the form of forum posts and more observant assessment: intervening when beneficial to the discussion, but for the most part remaining silent as a form of “positive assent” (Wang, 2010, p. 270) for the students’ ownership of the community and of their own engagement.

The two studies described above provide a meaningful contrast for this research. In both cases, support services do not feature in the report as the support needs of students are minimised by a restricted eportfolio program format. However, there is a key difference in the application of eportfolios in the two studies: the FSU Career Portfolio is an institutional tool for university-wide use outside of coursework and unrelated to the learning of subject knowledge, whereas *netfolio* is an eportfolio system used as a learning tool within a course. This difference in focus and priority between the two systems results in differing design methodologies. The FSU Career Portfolio is showcase-oriented, with specific and restrictive components that students are expected to complete individually with the help of a series of linear, pre-programmed tutorials. *Netfolio* is workspace-oriented, also comprised of a restrictive set of components, but integrated with eportfolios by other students in a socially constructed format. Although Wang (2010) does not describe the process by which students learned the skills required for using *netfolio* in their course, the implication of that research setting is that peer support and active collaboration in ongoing coursework were central to skill development and were the main avenue for technical and pedagogical support.

Both the FSU Career Portfolio and *Netfolio* offer valuable guidance and important lessons for the provision of support services in the research setting of this study. The institution-wide

success of the FSU Career portfolio over five years prior to the report indicates that even for administrative showcase portfolios that are not integrated with course work, there is potential for high levels of buy-in from students. It also indicates that in terms of the basic skills required for technical use of a limited-choice eportfolio system, a linear tutorial program can be suitable. The researcher suggests that for development of basic skills or for basic systems a program format that may be suitable is a *wizard* or *setup assistant* whereby the linear steps completed by the student actually result in the creation of the portfolio. Rather than simply showing them how to complete the task as a video or guidebook would, a *wizard* guides them through the process of actually completing it within the authentic context of the program itself. *Netfolio* shows that collaboration is possible in eportfolio use and is beneficial when achieved. The study indicates that collaboration, in the form of a community of practice approach, should be designed into the system and into the course rather than expected to occur organically in a system that was designed to cater for individual users or into a course that was designed to revolve around teacher-centred discussions.

2.3 Research on support services for eportfolio use

The researcher could not identify key studies focused primarily on technology support needs for eportfolio-based courses, yet clear links to this topic were drawn from research in closely related areas. Student attitudes toward eportfolios have been discussed by Bolliger and Shepherd (2010) and by Chatham-Carpenter, Seawel and Raschig (2010): with both sources suggesting that a planned system of support for eportfolios is important. Other research focuses more broadly on support needs in adult education, in which technology support is seen as a component of institutional support needs, along with the registry office and library help desk, and not as a component of teaching and learning in the course itself (Lee, Srinivasan, Trail, Lewis, & Lopez, 2011; Selim, 2007). Where authors do focus on the need for a system of support specific to eportfolio use (Thorpe, 2002) the technical aspects of such a system are viewed as a separate and less urgent concern when compared with the pedagogy and content support that faculty teaching staff may be expected to offer with regards to eportfolio use.

Separating the technology aspects of support services from the pedagogical aspects may be appropriate for general and basic technology use, such as when students need to learn how to search for information on the internet or when they need assistance to create an email account online. However, the researcher argues that in a context such as the research setting, where reflection and formative assessment are key elements of pedagogy in the course as well

as design features of the technology at hand, separating technology support from course pedagogy is not appropriate. For instance, where the student's support need is to enable campus wireless access on their laptop it is not necessary to provide them with the skill and knowledge to perform this task themselves, they simply need a support person to perform the task for them. Institutional information technology support staff (IT helpdesk) members in most cases do not have any background in education or eportfolio use, yet their expertise in digital technologies enables them to perform the technical tasks required of their role. Their role is to utilise technical expertise personally, not to impart it to their clients.

Supporting students in the development of an eportfolio is a much more student-centred and learning-centred process. It is an educational role more than a technical one, where the end goal is that the student is enabled with the skills and knowledge needed to develop their own eportfolio. Some of these skills are technical and some are pedagogical or conceptual, some may be better defined as attitudes: but in each case the student requires support in attaining the skill, not assistance in completing the task. The researcher therefore argues that relying solely on an institutional "IT helpdesk" approach to technology support for eportfolios is not appropriate, particularly where courses are designed to exploit the workspace benefits of eportfolio use (Barrett, 2011a) in addition to the showcase product for assessment.

A central issue in e-learning that has helped refine the scope of questioning for this study was highlighted by Wray (2007): "students who have advanced experience with technology are at a distinct advantage to students who have limited technology experience" (p. 455). While the instructor's digital competency has been identified as influencing student use of technology and course satisfaction (Lee, et al., 2011) it can be argued that the factor most directly involved in student use of technology is the student's own competency in using technology. The student's prior knowledge and skills markedly affect their need for support in a learning environment. Student knowledge and skills may also affect the student's ability to fully utilise course materials and some support service types: particularly in an online distance learning environment. Technology support must be provided in such a way that it does not present access issues for the students who need it.

Those students who are most in need of support, those who are at the biggest disadvantage in technology experience according to Wray (2007), ironically face the most obstacles to receiving that support in an online distance learning environment. The very skills that the student seeks support for may be needed in the process of receiving that support. To address this problem, as well as to cater for diverse learning styles, Lee et al. (2011) recommend the

provision of a range of varied types of support. Bolliger and Shepherd (2010) similarly argue that “learning environments should be designed to accommodate adult learners’ individual differences” (p. 311). While both sources indicate support service diversity is an important consideration in terms of student course satisfaction, the researcher sees it as crucial for accessibility to technology support services.

For other types of support, diversity in the delivery modes and styles allows the student to receive support in a preferable format, yet failure to achieve this diversity does not usually deny the student access to support in another form. For example, a new tertiary student may prefer to attend a guided orientation of their campus, but if this service is not available or does not fit their schedule the student will most likely be capable of finding their classroom with a campus map, or by asking another student passing by. If a map is the only service provided for the purpose of finding a classroom the student may consider themselves poorly served by the institution, but they have not been denied access to their classroom. In the case of technology support for online learning, failure to provide diversity in delivery modes and styles has the potential to deny access for those students most in need of support. For example, technology support that is available only in an online forum is not accessible to any student who does not understand how to access and navigate an online forum. Accessing and navigating an online forum is a technology skill that some students need support to attain. Even in the earliest stages of course-related technology support, students having trouble registering and logging into an eportfolio website must not be required to log in for access to the support materials that will help them learn to do so.

3 Methodology

3.1 Mixed Methods ‘concurrent triangulation’ design

Cresswell (2009) describes mixed methods research as

“another step forward, utilizing the strengths of both qualitative and quantitative research [... such that...] Their combined use provides an expanded understanding of research problems.” (p. 203)

Literally the combination of quantitative and qualitative methods, the use of mixed methods enables research to employ both statistical and thematic analyses of numerical and verbal data forms with the result of drawing *meta-inferences* (Tashakkori & Teddlie, 2010) that are both objectively sound and subjectively meaningful. This study collected and analysed quantitative and qualitative data concurrently and compared the findings of each data form to produce triangulated findings and draw meta-inferences from these findings. The result is a ‘concurrent triangulation design’ (Cresswell, 2009, p. 210). The researcher contends that in the context of this study the chosen research design can provide more relevant data and greater *legitimation* (a mixed methods measure of validity based on Onwuegbuzie, Johnson, & Collins, 2011) than either form of data in isolation. The researcher analysed quantitative data from surveys and frequency of use data to gain knowledge about student preferences and practices with regards to portfolios and support service use. Subsequently, qualitative feedback from surveys and support logs was intended to offer a deeper understanding of the contexts of these preferences and practices, allowing some meaningful interpretation as to how and why patterns occurred.

A pre-course survey was conducted in February (Survey 1, see appendix 8.1) and a mid-course survey was conducted in July (Survey 2, see appendix 8.2). Quantitative data from these surveys formed the primary data for analysis, and all other data enhanced this analysis by providing confirmation, interpretation and contextualisation of the quantitative findings.

3.2 Ethics

Student participation in the study was voluntary (see student participation consent form, appendix 8.4). Support services were provided to all students regardless of their decision to participate in the research or not. Surveys completed by students who agreed to take part in the study were compiled and numbered by a university research manager independent of this study before being provided as data for research. In this way, the identity of participants was kept anonymous with individual participants identified by unique participant numbers rather than student names. Qualitative data gathered from email and forum messages has been presented in this report without any indication of the authorship of related messages.

The overarching principles for ethical practice in this study included voluntary informed consent, privacy, anonymity, and confidentiality (Cohen, Manion, & Morrison, 2009). To ensure voluntary informed consent, research participants were introduced to the researcher and the research process at the earliest opportunity during a block course at the beginning of their course. Full disclosure of the nature of research involved an information handout (see appendix 8.3: Information for students about research on the course) and a pre-course seminar on the topic. Students in the course population were invited to opt in to the study, along with other studies conducted during the course by other researchers, by signing a voluntary consent form (see appendix 8.4). Only those students who opted into the study by signing the consent form were later asked to take part in surveys. As a further stage of voluntary consent, student participation in surveys was also wholly voluntary and took place online at the student's convenience. Therefore, even within the group of students who had signed consent forms survey data was only available for those students who voluntarily took part in the online survey. Students also had the right to withdraw at any stage until the end of the study year, although the right to withdraw was not exercised by any participants in this case.

There was potential for an ethical dilemma where voluntary participation could impact on, or be perceived as impacting on, the degree or quality of support services provided to the student (Cohen, et al., 2009). To counteract this ethical dilemma, participant anonymity both from the study audience as well as from the researcher was established in the methodology of research. Students were assured during the initial introduction and again periodically throughout the course that participation in the research could in no way impact on their right to receive support services. In addition to the express commitment to this assurance by the researcher, a practice that ensured this right to refusal was the involvement of a research

manager to establish anonymity. Due to the use of participant numbers, the researcher in this study was throughout the study year unaware of which students had opted into the study and which had not.

In the case of email and forum posts, the researcher could not avoid knowing the identity of the writer whose feedback was cited. To ensure that this knowledge did not impact on the students' right to refusal, the researcher kept a log of the identities of those students whose work was intended to provide quotes for the research report. In the final stages of research, after the due date for the students' eportfolio assignment, the research manager used this list to inform the researcher on whose feedback could be cited and whose could not. By timing this information after the due date for eportfolio assignment submission, the researcher aimed to ensure that provision of support services could not be impacted by the right to refusal.

Student names and professional settings were not mentioned in this report. The specific research setting was kept confidential. Quotations from email and forum posts by students who had chosen not to opt in to the study were not presented in the report.

3.2.1 Researcher embeddedness and bias

This case study was possible in part because of the researcher's embedded position as the facilitator of eportfolio support services for the course in which study participants were enrolled; yet this embedded position also raises potential issues of personal investment and bias. During research on the effective provision of support services for eportfolio use, the researcher was contracted in part for these same support services. Potential bias due to this embedded position was avoided through conscious and consistent acknowledgement of this potential and the application of strategies to minimise it, discussed below.

Aside from the potential issues that it raises, the researcher's embedded position also presented some benefits for the study. With the researcher involved both academically and professionally, embeddedness encouraged closer attention to qualitative themes and quantitative trends as they impact on student reception and use of support services. Positioning as a support person helped the researcher to develop a position of trust with a large number of research participants in the course population and could have encouraged more students to participate in the study. Finally, the researcher's professional role allowed access to a large pool of active participants as well as university resources such as a research management expert whose assistance was invaluable.

Two key potential issues related to researcher embeddedness were identified, with strategies employed to minimise these issues. Firstly, participants could have avoided providing negative feedback due to fear of unfair treatment by the support person. This issue was minimised primarily through the assurances of anonymity and transparency of research processes described above. The issue was also minimised through the practice of immediate and comprehensive support on all requests. Secondly, the researcher could have avoided presenting negative findings or criticism of support strategies or course structures due to the fear of damaging his working relationship with the contracting institutions. This issue was minimised through conscious and consistent acknowledgement that the researcher-institution relationship relies on accurate and factual reporting of findings and not on the positive nature of those findings. The issue was also minimised by consistent transparency of research practices with research participants and the course controllers involved. Finally, the mixed method design of the study also aimed to minimise the potential for biased reporting (Cresswell, 2009). Quantitative data collection ensured that misinterpretation of qualitative data was less likely, while qualitative data collection and the use of direct participant quotes enabled testing and meaningful interpretation of quantitative findings in an open and transparent way.

3.3 Data Collection and Analysis

This study involved the collection of quantitative and qualitative data forms from concurrent sources. The resulting data was analysed using methods appropriate to both forms as well as through a mixed comparison of the data for each. Table 3-1 below describes the data sources used in this study, provides the label by which each is referred to in this report, notes the collection period for each data source, and indicates the type of data involved.

Table 3-1: Data sources and labels for this study

Description	Label	Period	Data
A survey conducted early in the course.	Survey 1	February; pre-course	Primary quantitative data. Some qualitative feedback fields.
A survey conducted later in the course.	Survey 2	July; mid-course	Primary quantitative data. Some qualitative feedback fields.
Ongoing logs of technical support email requests related to eportfolio use.	Email logs Email frequency logs	February 14 – July 31	Quantitative data on frequency of use. Qualitative feedback.
Ongoing logs of course forum posts related to eportfolio use.	Forum logs Forum frequency logs	February 14 – July 31	Quantitative data on frequency of use. Qualitative feedback.

The research questions introduced in Chapter 1 were explored first through statistical analysis of quantitative data, followed by theme analysis of qualitative data as a means of triangulating the findings of both data forms and building a deeper and more complete understanding of the case. Quantitative and qualitative data were collected concurrently, whereas analysis occurred sequentially, with analysis of qualitative data taking place after the analysis of quantitative data. The inclusion of qualitative analysis methods aimed to challenge, interpret and strengthen understanding of the initial quantitative findings.

A large number of the questions for quantitative data used non-symmetrical rating scales to elicit participants' attitudes and perceptions on eportfolio use; where appropriate a polar question form (*yes or no*) was used. The Likert type rating scales employed in this study (Cohen, et al., 2009) were non-symmetrical due to the topic of questioning and the researcher's assumption that ratings should begin at zero. For example, when asked to rate the usefulness of support from *email to a teacher* (Survey 1, Q34d; Survey 2, Q13d & 14d) the researcher assumed that the least positive rating should be the rating "not useful". A symmetrical approach would have required including ratings to indicate that sending an email request for support from a teacher can be detrimental in adult education and that it negatively affected the student's learning. The researcher felt that this negative rating option could introduce data that may distract from the focus of the study on support service preferences and practices and could negatively impact on the collection and interpretation of data overall. In analysis of Likert scale data, the most positive rating was always given the value of '1' and less positive ratings ascended in value. For example, in Survey 1 Question 34 (see Appendix 8.1) the ratings were valued as follows:

Table 3-2: Values applied for analysis of usefulness ratings

Survey Rating	Analysis Value
Very Useful	1
Useful	2
Somewhat Useful	3
Not Useful	4
Don't Know	Missing

As a result of this method of ascribing values in ascending order from most positive to least positive, the results for correlation tests between Likert scale data and demographic data are inverted. For example, data for *age group* ascended from younger age groups at low numbers to higher age groups at high numbers. A positive correlation between support service usefulness, a Likert scale result, and *age group* data therefore indicates that usefulness ratings are *less* positive in *higher* age groups. Correlations between two Likert scale data sets are not inverted in this way as they would both follow the same order of ascension.

The quantitative data gathered from surveys was from a sufficiently large sample size (totalling 63 and 54 participants for Survey 1 and Survey 2 respectively) to enable the use of parametric tests (Field, 2009). To ensure that these tests were robust, as the use of parametric tests

classically requires normally distributed results (Field, 2009) and the results in this case were not normally distributed, the statistically significant values were compared with corresponding values in the equivalent non-parametric tests. Significance values as well as effect sizes were similar in the parametric tests and non-parametric equivalents (within 0.01 and 0.5 respectively). With this assurance of robustness, the validity of parametric test results was confirmed.

Each research question was approached first via analysis of data for the relevant survey questions in Survey 1 and Survey 2. Statistical tests for these data sets were chosen according to the requirements of the question: for example, Pearson correlation tests were chosen to identify relationships between variables while dependent two tailed t-tests were used to identify changes over time. Statistical tests were two tailed and statistical significance was based on the standard alpha values of 5% and 1% (Field, 2009) indicated in tables with one asterisk or two asterisks respectively. Where observed, significance values of 0.1% are also indicated with three asterisks. Effect sizes were considered small, medium or large according to the following spectrum (based on Field, 2009, p. 32):

$r = 0.10$ (small effect)

$r = 0.30$ (medium effect)

$r = 0.50$ (large effect)

The stated figures of 0.10, 0.30, and 0.50 were not treated as definite “cut-off” points (Cohen, et al., 2009, p. 520); rather, each figure was treated as the centre of a spectrum. In this way, effect sizes of 0.0 to 0.20 were described as small, 0.20 to 0.40 as medium, and 0.40 and above as large.

In Pearson correlation tests, calculations were conducted automatically using the appropriate functions in the software package SPSS 18. Pearson’s correlation coefficient is used as an indicator of effect size (r).

In reporting of findings for t-tests, although most calculations were conducted automatically in SPSS 18, the effect sizes (r) of statistically significant values were calculated manually following a formula from Rosnow & Rosenthal, 2005, as cited in Field (2009, p. 294).

$$r = \sqrt{\frac{t^2}{t^2 + df}}$$

For dependent t-tests reference is made only to relationships where the significance value is lower than 5% ($p < 0.05$). Significance values for correlation tests are displayed in each table only for results where the significance value is lower than 5% ($p < 0.05$), otherwise only the effect size is displayed.

Some research questions were also matched with frequency of usage data for online resources, email messages and forum posts. Quantitative findings were also triangulated with relevant qualitative data drawn from open-ended survey responses and from email and forum posts related to eportfolio support. Tracking of themes and direct quotations from these qualitative sources were used to expand on the statistical findings for quantitative survey data, including numerical results of quantitized (Onwuegbuzie, et al., 2011) frequency of themes data.

3.4 Research Design

Figure 3-1 below (adapted from Cresswell, 2009) represents the study's concurrent triangulation design. Arrows represent a systematic comparison of one data set with another. Double arrows indicate the comparison is employed by both data sources on each other. Capital letters are used to emphasise the ruling data form in a comparison where applicable (QUAN for quantitative or QUAL for qualitative). The comparative size of the figures indicates that fixed-term collection data is the primary data source, while ongoing collection data is secondary.

The figure can be read from left to right in order of both the sequence of analysis and the priority placed on data sources in the analysis. First and foremost, quantitative data in the form of Likert scales, rating scales and demographics from Survey 1 is presented and compared with the same data in Survey 2. Next, quantitative data is compared with qualitative data from each survey, in the form of emergent themes and participant quotes, while some comparisons are also made between qualitative data in Survey 1 and Survey 2. Lastly, findings from fixed-term collection data (both quantitative and qualitative data types from Survey 1 and 2) are compared with ongoing collection data from technical support email logs and peer support forum logs. The most prominent aspect of data from these logs is their qualitative themes, while some attention is also paid to their quantitative aspects: including frequencies and recorded dates.

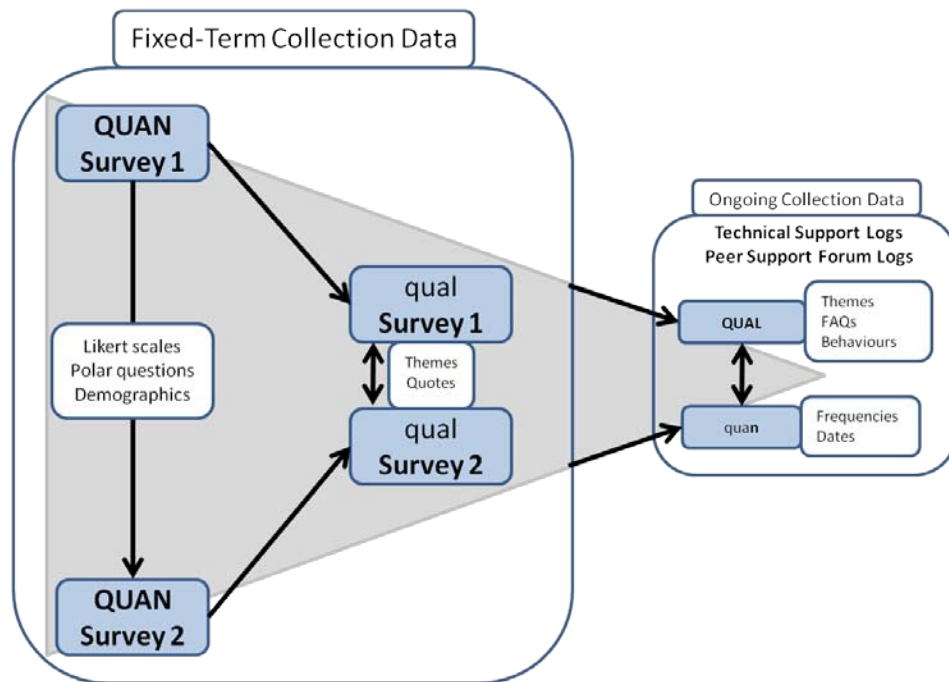


Figure 3-1: Representation of concurrent triangulation design for this study

Due to time constraints, the analysis and discussion of data from a concluding survey at the end of the case study was not feasible. The specialist teaching programme in which the research participants were enrolled, and to which the studied support services and materials contributed, completed its first year with the students' submission of their portfolios for assessment by October 21st, 2011. Setting a post-course survey after this date would not have allowed sufficient time for collection and analysis of data for inclusion in this thesis. Therefore the mid-course Survey 2 was included to enable some analysis of changes in participant skills and attitudes over time: in lieu of a more comprehensive comparison of pre-course and post-course data. To maintain consistency between the views expressed by participants in quantitative survey answers compared with qualitative feedback and support logs, the date of July 31 was elected as the cut-off date for both quantitative and qualitative data collection analysed in this report. The same date was also the cut-off for submission of answers online for Survey 2.

3.4.1 Legitimation

With the use of both quantitative and qualitative methods of data collection and analysis, quantitative measures of validity and reliability (Cohen, et al., 2009) as well as qualitative measures of these factors such as trustworthiness and credibility (Lincoln & Guba, 1985) could be seen as relevant. The data types in this study were mixed, with the intention of drawing

meta-inferences: combined inferences from both sets of data that contribute to a meaningful unified reading (Tashakkori & Teddlie, 2003). Therefore, relatively new measures of *legitimation*, recommended for establishing validity in mixed data analysis (Cresswell, 2009, p. 219; Tashakkori & Teddlie, 2010) were applied.

To establish and maintain legitimation in the application of mixed methods research, Onwuegbuzie and Johnson's (2006) *typology of mixed methods legitimation types* was applied. The following table summarises the strategies employed for legitimation in this study in terms of the related legitimation type and its definition. The titles for each of the nine legitimation types and interpretations as to how these relate to strategies for legitimation in this study are based on Onwuegbuzie, Johnson, and Collins (2011).

Table 3-3: Legitimation types and the strategies used to assure them

Legitimation type	Strategy in this study
Sample integration	As the primary source of data for analysis was quantitative, sampling methods appropriate to quantitative approaches were maintained. Quantitative responses resulted from a voluntary sample group within a course population, with no purposive sampling or restriction on participation within the group. Qualitative responses resulted from the same population with the same conditions.
Inside-Outside	The researcher's positioning allowed an authentic subjective <i>inside</i> view as support provider and course community insider as well as an authentic objective <i>outside</i> view of survey response and support service frequency of use data. The collection of quantitative and qualitative data allowed these two perspectives to be exploited separately, while a mixed methods approach enabled the researcher to draw meta-inferences by combining and comparing their results.
Weakness minimization	One of the main reasons for the use of mixed methods in this case was the researcher's beliefs that a large sample could offer a broad set of quantitative data, while embeddedness in the research setting could encourage honest qualitative feedback from participants and add depth of meaning to the statistical data. These intentions inherently suggest minimising the weaknesses of each data set by exploiting the strengths of each other.
Sequential	Sequential type threats to legitimation were minimised through the concurrent collection of both quantitative and qualitative data. Although the study included both scheduled and ongoing forms of data collection, the analysis of these sets of data began after all forms of data were collected.

Legitimation type	Strategy in this study
Conversion	<p>Qualitative data were quantitized (Onwuegbuzie, et al., 2011) by counting the instances of themes. These quantities were reported and the findings and discussion makes reference to qualitative feedback that represents popular themes or that closely reflects significant statistical values in the quantitative results.</p> <p>Quantitative data was reported in its native form to avoid conversion threats to legitimation, and in those cases where data was qualitized the narrative description resulting from this process was an addendum to the quantitative report.</p>
Paradigmatic mixing	<p>Social constructivist approaches to education underpinned course methodology in the research setting, and the support services adopted a suitable epistemology along the same lines. While the research methodology was in practice “quantitative-dominant” this did not necessitate a normative paradigm for research (Cohen, et al., 2009). The primary set of quantitative data was collected from surveys that were based on rating scales, and the participant’s response to each question allowed subjective and self-determined rating of their attitudes or perceived abilities. The researcher did not at any stage in the study contend that statistical data represent a more valid or more reliable source of knowledge than qualitative feedback or frequency of use data. Quantitative data was considered the primary source because it represented a large set of questions intentionally designed to support the study’s research aim and was acceptably consistent in sample size.</p> <p>An interpretive paradigm was deemed legitimate in analysing both the qualitative feedback in participants’ own words and the quantitative statistical data based on their subjective ratings on attitudes, expectations and perceptions (Hennink, Hutter, & Bailey, 2011).</p>
Commensurability	<p>The study was approached from an interpretive paradigm and a social constructivist epistemological viewpoint. These positions are compatible (Cohen, et al., 2009) and the researcher sees commensurability as not applicable in this case.</p>
Multiple validities	<p>Quantitative validity was pursued, such as through open and comprehensive reporting of findings from consistent statistical tests (Girden & Kabacoff, 2011).</p> <p>Qualitative trustworthiness was pursued, such as through prolonged engagement (Lincoln & Guba, 1985) in the course community by the researcher in their additional role as support provider.</p>
Political	<p>The current significance of eportfolios in education established in chapter 2 and chapter 1 indicates the particular relevance of this tool to the New Zealand education setting. Educators, support providers, course providers and students can benefit from this research. The researcher sees a mixed methods approach as beneficial as readers can examine both narrative discussion on subjective participant views as well as open reporting of quantitative data from a large sample group. Meta-inferences based on these two types of data form a framework for strategic planning and facilitation of support services that can enrich learning processes for each of these beneficiaries.</p>

3.5 Research Setting

3.5.1 The Researched Course

The research setting was a postgraduate course in specialist teaching coordinated and delivered in collaboration between two New Zealand universities. The course was delivered through a predominantly online distance format using the 'Moodle' learning management system software. In addition to the active online environment, the addition of two campus block courses and local collaborative student groups facilitated a blended learning approach. The course range was offered as online distance study for students enrolled with either of the collaborating institutions, yet considerable planning and effort went into addressing the needs and preferences of a diverse group of students. The result was a blended approach stemming from a core philosophy, the bCIIP (blended, Community, Inquiry, Inter-professional Practice) model (Mentis, 2010). This model draws from blended learning theory (Garrison & Vaughan, 2008), communities of practice theory (Wenger, 2006) and inquiry learning theory (Levy, 2008) as well as from a philosophy of inter-professional practice.

The majority of students undertook the course part time, with two year-long course modules studied concurrently. One of these modules dealt specifically with the student's chosen teaching specialty within one of five specialty domains. These domains included autism spectrum disorder, Deaf and hearing impairment, learning and behaviour diversity, gifted and talented education, blind and vision impairment, and early intervention. The other paper was compulsory for all students regardless of specialty and covered educational theory and practice relevant to all specialist domains.

In each of these course modules a final assignment required the completion of a portfolio to document student attainment of self-appointed learning goals through coursework, inquiry, reflection, professional practice, and collaboration in the online class environment. Students could produce a portfolio in any suitable format: including paper hard copy, a computer document (such as Microsoft Word or PDF), a digital presentation format (such as Microsoft Powerpoint or Prezi), or an online eportfolio (using MyPortfolio or another eportfolio platform). Students were encouraged to use the MyPortfolio online eportfolio platform to produce an eportfolio, for reasons detailed below and in chapter 2 based on literature and research on eportfolio use in higher education.

3.5.2 Sample

There were 162 students enrolled in the course during the year of this research. A total of 63 students participated in Survey 1 (this figure excludes an additional 13 students who took part in the survey as a whole, but answered only the demographic questions). A total of 54 students participated in Survey 2. Students who took part in both Survey 1 and Survey 2 and whose answers could be matched for comparison totalled 32 students. For descriptive statistics and correlation tests the total responses for each survey were used, while for paired t-tests and comparison of changes in qualitative feedback the core sample group of 32 matched participants was used.

Survey participation was anonymous, with a research manager establishing permissions for research and removing names before forwarding survey data to the researcher. Each participant's Survey 1 and Survey 2 responses were recorded against the same unique participant number. In 32 cases this participant number could be matched and consequently the same participant's answers for Survey 1 and Survey 2 could be compared. However, in a number of cases (31 cases in Survey 1 and 22 cases in Survey 2) the participant did not provide sufficient information, such as their name, to accurately match their responses to both surveys. Frequency data for email and forum posts, and qualitative themes from email and forum posts, were gathered from the general course population, with each cited participant's "opt in" status confirmed in the final stages of research as explained in section 3.2.

3.5.3 Support Services

A range of support services were offered to students in the course to support the creation and ongoing use of a portfolio. These support services were focused primarily on the skills and rationale behind producing and using an electronic portfolio, yet students were assured that the support services would be available to them as needed regardless of their chosen portfolio format.

The various support services provided to students were designed to represent different methods of student support and different methods of learning. The aim of this approach was to allow a degree of student choice of support service use. Based on literature reviewed in chapter 2, the support person intended that diversity of support services would be more beneficial to students than a limited focus on certain methods (Bolliger & Shepherd, 2010; Lee, et al., 2011). The researcher intended that allowing students to choose from a range of support service types would enable authentic and meaningful data on support service

preferences to be gathered, in the form of participant feedback as well as usage statistics for each support service. Diversification of support services also enabled students to select those services most relevant to their needs and learning preferences. While the methods of support were varied, the rationale for eportfolio skills development behind each of these services was based on a consistent view of eportfolios as having both demonstrative and reflective strengths. This view, explored in section 2.1.2, is illustrated by Barrett's (2011a) depiction of eportfolios as having two faces (see Figure 2-1), a demonstrative showcase face and a reflective workspace face, both in terms of their functional objective and the process by which they are created.

The technical support services offered were:

- a. A Specialist Teaching Introduction View (web page)
- b. Printable guides in text and images
- c. Video guides
- d. Face to face workshops
- e. Online examples of assignment work layout
- f. Email and forum support online
- g. General access to lecturers and peers online in forums and face to face at block courses, local peer support group meetings, and workshop sessions

a. Specialist Teaching Introduction View

In addition to the presentation of all support services and support service channels on the course website, a web page was constructed on the eportfolio host website MyPortfolio as a single repository for all support service materials and channels. This web page, and all associated support materials, are available publicly online (see Simpson, 2011).

b. Printable guides in text and pictures

A guidebook was produced detailing the steps that students would need to take to register with MyPortfolio and then follow the functional stages of *store*, *present* and *access* in producing their eportfolios. The guidebook was presented in five chapters that were scaffolded as a continuous course, but also indexed for use as a quick reference. Steps in the guidebook were based around diagrams and authentic screenshots (still images of the computer screen during a demonstration) of these steps in action. Students could view the guidebook page by page from the course website, or download it in printable PDF format. The guidebook can be downloaded in PDF format from a hyperlink in the top-right region of the Specialist Teaching Introduction View (Simpson, 2011). It is not included in this thesis as an appendix due to the size of the document (a 78 page booklet).

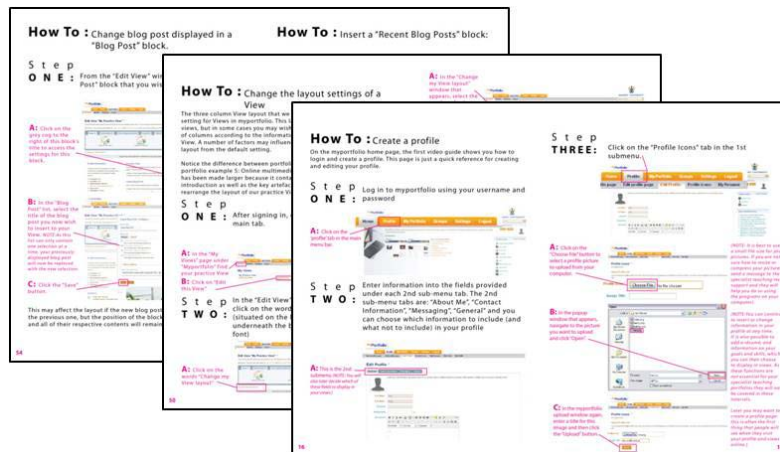


Figure 3-2: Sample pages from the student eportfolio guidebook.

c. Video guides

Instructional videos were produced, explaining the steps from each of the guidebook chapters in voice over and screen casts (live action recordings of the computer screen during a demonstration). Students could access the instructional videos either via the course website or from the Specialist Teaching Introduction View (Simpson, 2011).

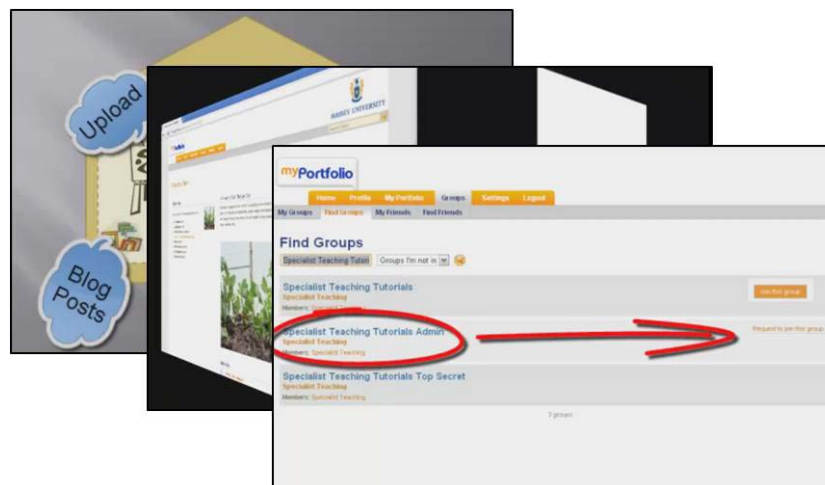


Figure 3-3: Sample shots from the instructional videos.

d. Face to face workshops

Face to face workshops were held across various locations within New Zealand for small local student groups to provide intensive practice in eportfolio use. The workshop venues and facilities were organised by students and attendance was optional, yet more than 95% of students who were enrolled in the course attended a workshop. The workshops consisted of three sessions, including a session on the rationale behind eportfolio use and its three functional stages (*store, present* and *access*), an activity session in which students completed a practice eportfolio, and an open session in which students could network as well as call on support staff, teachers and peers to help with individual needs.

e. Online examples of assignment work layout

A set of example portfolios in various formats were presented to students representing possible layouts that could be applied to their assessed portfolio. The examples were accessible to students on the course website and through the Specialist Teaching Introduction View web page, (Simpson, 2011). The sample portfolios included examples in Microsoft Word and PDF format, Microsoft Powerpoint presentation format, and MyPortfolio online eportfolio format.

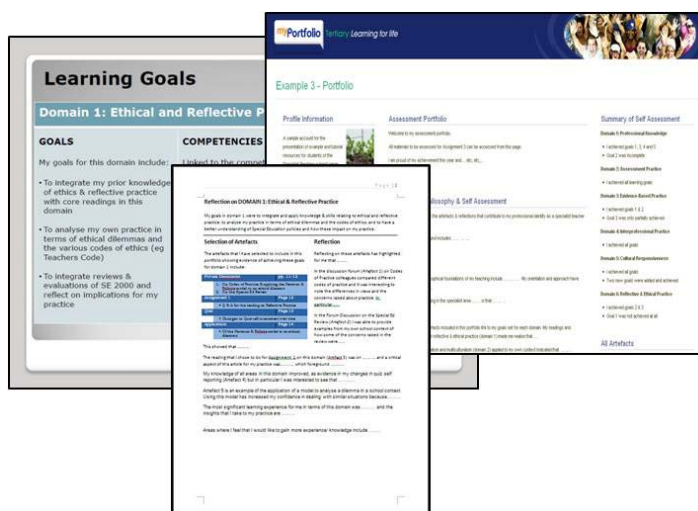


Figure 3-4: Example portfolio presentations in various formats.

f. Email and forum support online

Throughout the study year, students had access to a technical support email address and were invited to contact support staff at this address if they faced problems or had any questions related to their eportfolio. They could also contact support staff through a messaging system on the course website. Support staff (the researcher), answered all support emails promptly with detailed feedback and, where appropriate, with numbered instructions for solving the issue at hand.

A peer support forum was also established at the beginning of the study year and students were encouraged to share questions, issues, ideas, experiences and discoveries in this forum. The peer support forum was hosted on the course website in a technical support area of the website that was separate from other course- and subject-related forums.

Support staff (the researcher) encouraged students to use the peer support forums to resolve issues and answer questions. In many cases the researcher would reply to a technical support email requesting that the student “repost” their question in the peer support forum. This practice was adhered to particularly in the case of frequently asked questions or issues that

the researcher felt other students would benefit from discussing, with the intention of encouraging collaboration in the student body and cultivation of a community of practice around eportfolio use (Wenger, McDermott, & Snyder, 2002; Wenger, et al., 2009).

g. General access to lecturers and peers online and face to face

Students could and did (according to student and teacher feedback) also communicate with each other, with course lecturers, and with friends and family outside the course, on matters related to eportfolio use. This authentic and casual avenue for development was encouraged and emphasised during workshops and in support staff messages.

4 Findings

This chapter provides an outline of data collected and analysed in the context of the six research questions that support this study. The research questions introduced in chapter 1 are used as headings to guide the presentation of data relating to each question. Relationships between collected data, key findings for each research question, and the interpretation of meaning from these findings are approached in chapter 5.

4.1 Research Question 1:

Which support services are utilised most?

In two surveys, participants were asked to rate listed support services in terms of usefulness. In pre-course Survey 1, they rated the expected usefulness of support services throughout the study year, February through October. Later, in mid-course Survey 2, they again rated the expected usefulness of support services during the remainder of the study year, July to October. In addition to this, participants in Survey 2 also provided ratings for the actual experienced usefulness of support services during the completed semester, February to July. Perceptions of usefulness are employed as an indicator of the extent to which various support services were utilised by students as these perceptions are likely to influence actual subsequent behaviour. Collection of numerical data on the frequency of use of support services was in most cases not practical and would not necessarily provide an accurate depiction of the actual value of the support service. In contrast, student expectations as to how useful each service would be to them as well, as student perceptions of how useful the support service had actually been, were seen as both accessible and valid as an indication of actual value. Where frequency of use data was available, for example in the frequency of peer support forum posts, this data was considered as a secondary source with the purpose of enhancing analysis of the primary data source: survey responses.

Figure 4-1 below displays the results of Survey 1 on expected usefulness of each support type. The highest number of positive ratings was given for the support types *prepared materials*, *email to support staff*, and *face to face or online chat with support staff*. These support types were all rated positively, that is considered at least *somewhat useful*, by 94% of respondents. However, *prepared materials* received the most positive response with 62% of participants rating it as *very useful* compared with 43% for *email to support staff* and 44% for *face to face or online chat with support staff*. Support from *friends and family* was expected to be useful by the lowest number of respondents, with 21% rating it as *not useful*.

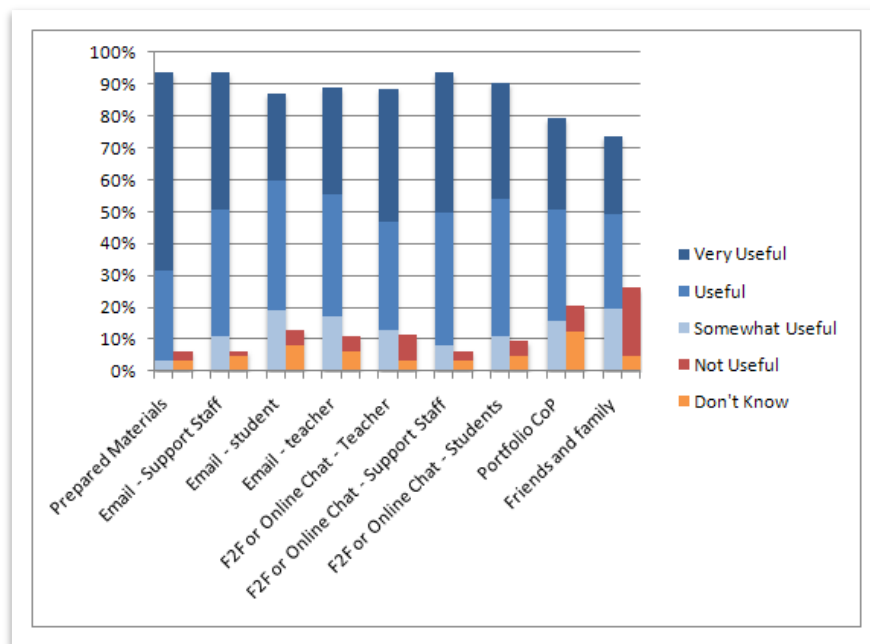


Figure 4-1: Survey 1 expected future usefulness of support services

Figure 4-2 below displays the results of Survey 2 for expected usefulness of each support type. The highest number of positive ratings was given for the support type *email to support staff*. This support type was rated positively, by 94% of respondents. *Email to support staff* also received the highest number of *very useful* ratings at 50%, slightly more than *prepared materials* at 48% and *face to face or online chat with support staff* at 49%. Support from *friends and family* was again expected to be useful by the lowest number of respondents, with 38% rating it as *not useful*.

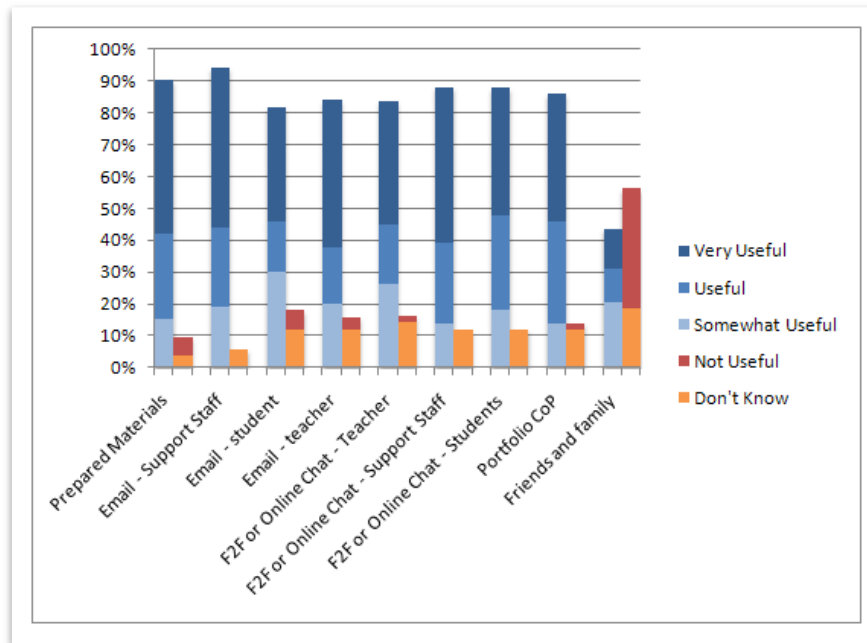


Figure 4-2: Survey 2 expected future usefulness of support services

As shown in Figure 4-3 below, the ratings in Survey 2 for actual experienced usefulness of support services were generally less positive than ratings of expected usefulness from both surveys. The highest number of positive ratings by a considerable margin was given for actual use of the support type *prepared materials*. This support type was rated positively, by 93% of respondents. However, the support type *face to face or online chat with support staff* received the highest number of *very useful* ratings at 45%. Consistent with expectation ratings presented in the previous figures, support from *friends and family* was experienced as useful by the lowest number of respondents, with 45% rating it as *not useful*.

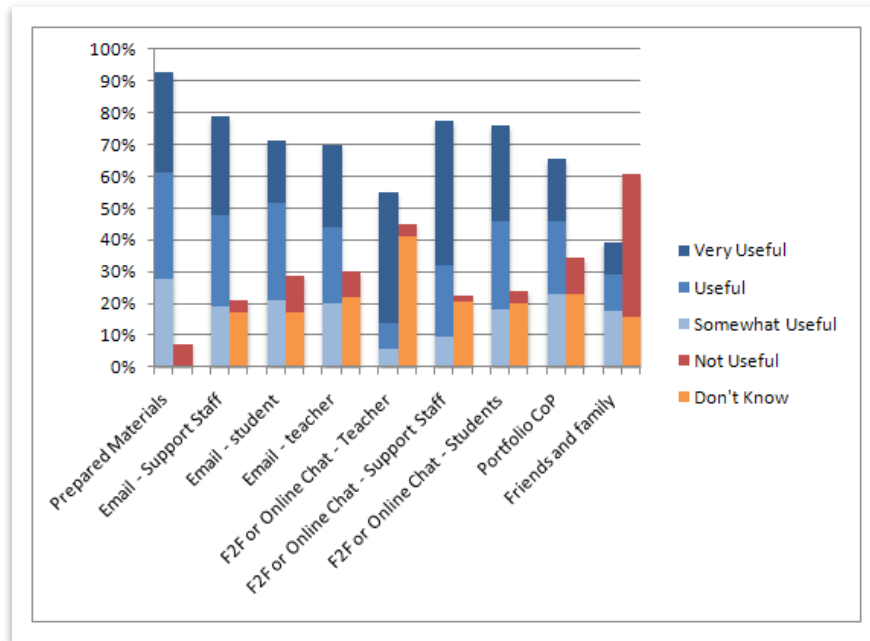


Figure 4-3: Survey 2 actual usefulness of support services

The results for these three question sets indicate that according to student expectations and experience, *prepared materials* was the most useful and most utilised support type. *Email to support staff* and *face to face or online chat with support staff* were also considered useful and were utilised more than other support types. Support from *friends and family* was considered least useful, and in terms of actual usage was utilised the least.

Some frequency data was collected for the purpose of enhancing the above results. The findings of frequency data in this case are generally consistent with survey results.

Tutorial videos on YouTube, one aspect of the support service type *prepared materials*, received a total of 293 views during the data collection period. A total of 77 emails specifically related to eportfolio use were sent to eportfolio support staff by 39 students. A total of 45 peer support forum posts were authored by 21 students. This data indicates that prepared materials were accessed at a much higher rate than the number of messages in email and forum support. However, access to forum support can be defined both as reading existing posts as well as authoring new ones so the relatively low number of messages may not represent the actual frequency of usage of forum posts. The implications of this frequency data are discussed further in section 5.1.

In Survey 2, participants were asked if they had attended an optional face to face workshop on eportfolio skills and concepts. Positive responses were given by 94% of respondents. This

result is consistent with attendance figures, which were estimated at around 95% of the total course population.

Qualitative data supports the findings on support service usefulness outlined above.

Interaction in the peer support forums consisted of more requests for support from technical support staff than communication between students. This finding is consistent with the low ratings for *community of practice* and *email to student* relative to ratings for other support types (see Figure 4-1, Figure 4-2, and Figure 4-3 above).

The popularity of *prepared materials* was reflected in those forum posts in which students communicated with other students. Peer to peer communication included comments such as “I went to the ‘how to’ and learnt I could put on my Blog as an attachment”, and “Don’t stress, there are videos and articles that you can use to figure out how the portfolio works”.

The high ratings for *email to support staff* were supported by qualitative findings. More messages were emailed to support staff than were posted in the peer support forums. Moreover, all of these staff support requests ended in a positive resolution, which accounts for the consistency of high ratings for this support type relative to other support services.

Face to face support was highlighted by a number of students in open-ended survey questions. Participants in Survey 1 named “small group face to face tutorials” and someone to “show me [how to use eportfolio tools] face to face” as additional support types that would be useful. By the commencement of Survey 2, the vast majority of students had taken part in small group workshops on eportfolio use. Feedback to questions in Survey 2 on the usefulness of this support type were overwhelmingly positive, which is consistent with the high attendance rate mentioned above with participants noting that “the big picture of how the eportfolio works was given so I had a better understanding”, “the session was informative and helped me to understand [the eportfolio’s] capabilities”, and “I was able to come away with the tools to start to put it together myself... just needed the nudge!” The chief concerns about workshops were that these were not long enough, not provided at the optimum time, and were not scheduled to be repeated later in the course.

In summary, the data shows that all support services were given highly positive ratings for usefulness. *Prepared materials*, *email to support staff*, and *face to face workshop or online chat with support staff* were the highest rated support types in all three data sets. The support type rated as least useful was support from *friends and family*. Frequency of use data shows that a large number of participants used the prepared material resource of video tutorials while

fewer made use of email support services and peer support forums. The popularity of prepared materials as well as staffed support services was reinforced in qualitative feedback.

4.2 Research Question 2:

Do expectations of support service usefulness change significantly over time?

Survey 1 (February) and Survey 2 (July) data for student expectations of support service usefulness can be compared for change over time: see Figure 4-4 below.

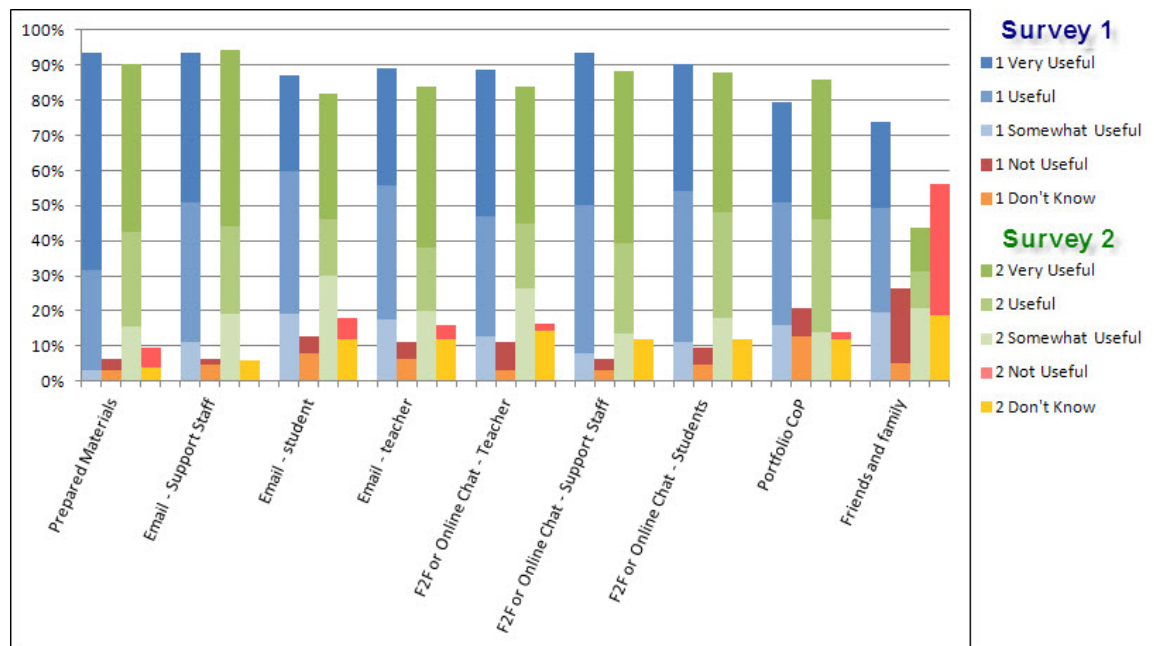


Figure 4-4: Comparison of Survey 1 and Survey 2 data on expected usefulness of support services

The most striking change is in the expected usefulness of support from *friends and family*. Other changes over time, both positive and negative, are less dramatic. For each support type, excluding *portfolio community of practice* and *friends and family*, there is a slight fall of between 0% to 5% positive responses between Survey 1 and Survey 2. The only support types that were rated positively by more students in Survey 2 than in Survey 1 are *email to support staff* and the *portfolio community of practice*. The change over time for *email to support staff* was less than one percent, with both Survey 1 and Survey 2 ratings rounded to 94%. *Portfolio community of practice* was rated positively by 79% of students in Survey 1 compared with 86% in Survey 2.

Paired sample two-tailed dependent t-tests comparing data for Survey 1 and Survey 2 (see Table 4-1 below) indicate that significant differences over time are observed for *prepared materials* ($t(23)=-2.410$, $p=0.024$, $r=0.449$), *email to a student* ($t(16)=-2.219$, $p=0.041$, $r=0.485$), and *friends and family* ($t(16)=-2.781$, $p=0.013$, $r=0.571$). In each case, the results show that

overall the total number of positive ratings were fewer in Survey 2 than in Survey 1. Although there was only a small change over time in the total positive ratings for these support services, dependent t-tests show significant change with large effect sizes due to a shift from moderate to strong responses within these totals.

Table 4-1: Means and standard deviations for expected Survey 1 versus expected Survey 2

	Survey 1 Expected usefulness	Survey 2 Expected usefulness
Prepared materials		
MEAN	1.38	1.83
SD	0.711	0.917
Email to a student		
MEAN	1.65	2.12
SD	0.702	0.781
Friends and family		
MEAN	2.41	3.12
SD	1.121	0.928

Most support services experienced a small decrease in total positive ratings over time, yet there was actually an increase observed for *very useful* ratings, see Table 4-2 below. Only three support service types had less *very useful* ratings in Survey 2 than in Survey 1. These include *prepared materials*, *face to face or online chat with teacher*, and *friends and family*. It can be observed visually in Figure 4-4 above that increases in *very useful* ratings can mostly be accounted for in a corresponding decrease in *useful* ratings, as well as lower totals for *not useful* and *don't know* ratings.

Table 4-2: Change over time in ratings of expected usefulness

Change over time in total positive ratings versus very useful ratings		Total positive ratings			Very useful ratings		
		Survey 1	Change	Survey 2	Survey 1	Change	Survey 2
Expected usefulness of support type	Prepared materials	94%	-4%	90%	62%	-14%	48%
	Email to support staff	94%	0	94%	43%	+7%	50%
	Email to a student	87%	-5%	82%	27%	+9%	36%
	Email to a teacher	89%	-5%	84%	33%	+13%	46%
	Chat with teacher	89%	-5%	84%	42%	-3%	39%
	Chat with support staff	94%	-6%	88%	44%	+5%	49%
	Chat with students	90%	-2%	88%	37%	+3%	40%
	Community of practice	79%	+7%	86%	29%	+11%	40%
	Friends and family	74%	-30%	44%	25%	-12%	13%

As shown in Figure 4-5 below, there is a large difference between total ratings for expected usefulness of support services in Survey 1 compared with total ratings for actual usefulness of support services in Survey 2.

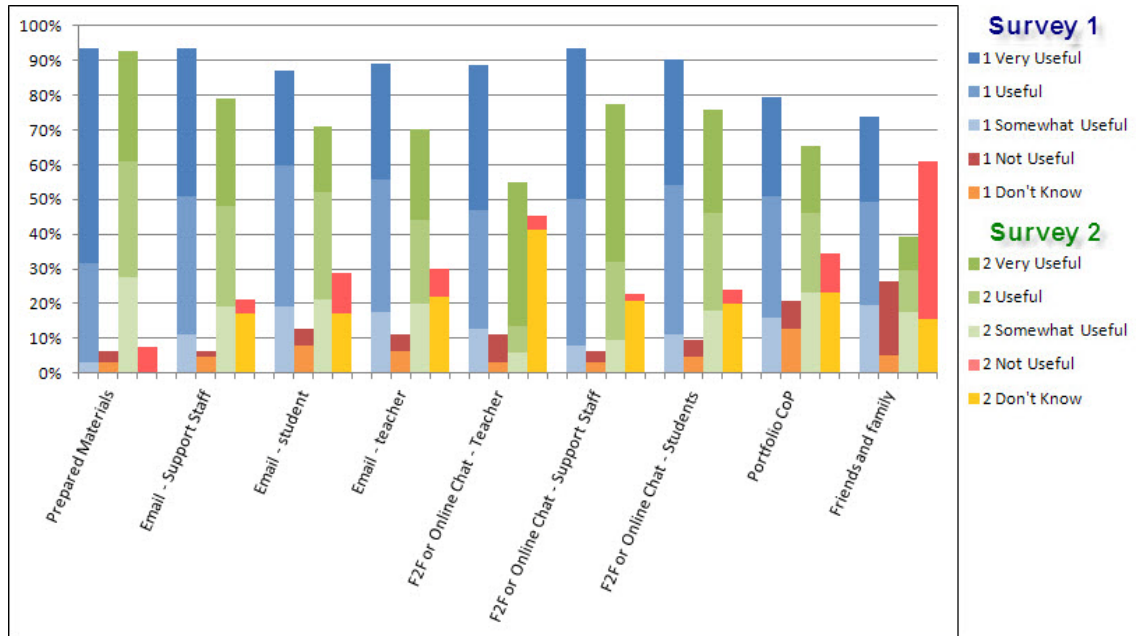


Figure 4-5: Comparison of Survey 1 expected usefulness and Survey 2 actual usefulness of support services

However, two tailed dependent t-tests comparing these two response sets find significant differences in only four cases. *Prepared materials* ($t(24)=-3.089$, $p=0.005$, $r=0.533$), *email to a student* ($t(15)=-2.150$, $p=0.048$, $r=0.485$), *building a community of practice* ($t(13)=-2.223$, $p=0.045$, $r=0.525$), and support from *friends and family* ($t(16)=-3.108$, $p=0.007$, $r=0.614$). For

each of these support services, participants rated its actual usefulness in Survey 2 lower than its expected usefulness in Survey 1 and the effect size of the change was large.

Table 4-3: Means and standard deviations for expected Survey 1 versus actual Survey 2

	Survey 1 Expected usefulness	Survey 2 Actual usefulness
Prepared materials		
MEAN	1.40	2.04
SD	0.707	0.889
Email to a student		
MEAN	1.75	2.19
SD	0.683	0.750
Building a community of practice		
MEAN	1.64	2.29
SD	0.633	0.994
Friends and family		
MEAN	2.35	3.29
SD	1.169	1.047

The third comparison of data sets for change over time takes ratings for actual usefulness of support services given in Survey 2 compared with ratings for expected future usefulness of support services also given in Survey 2 (see Figure 4-6 below). The only support service that received lower ratings for expected usefulness compared with actual usefulness was *prepared materials*. Participants expected all other support types to be more useful after Survey 2 compared with their experience prior to Survey 2.

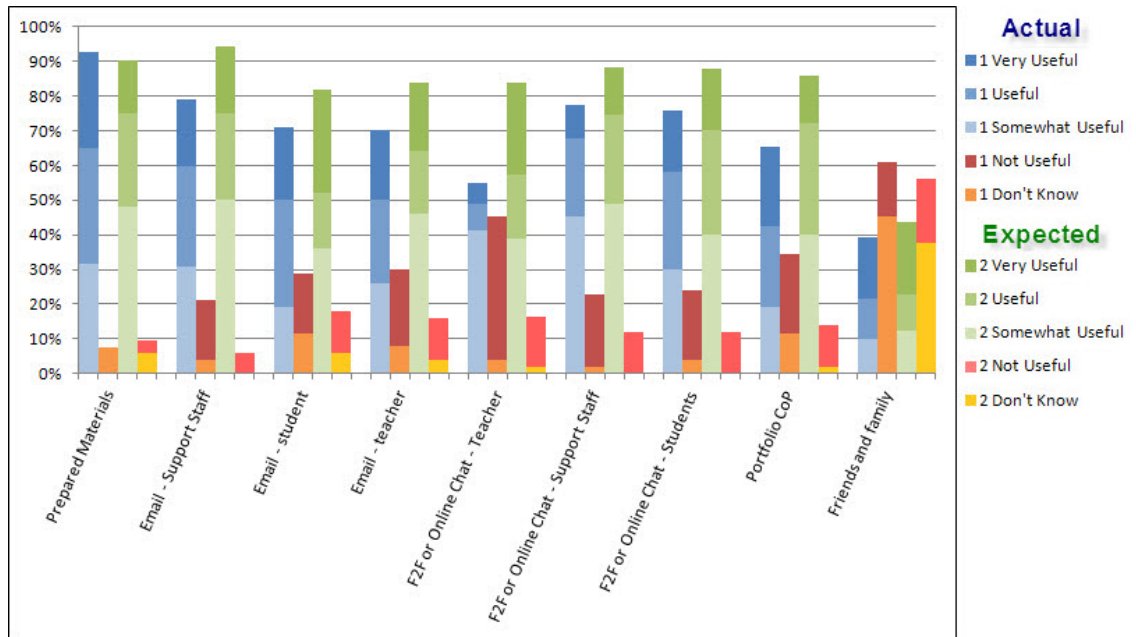


Figure 4-6: Comparison of Survey 2 actual usefulness and Survey 2 expected usefulness of support services

Findings show marked change in the comparison of totals for each survey, yet only a small number of significant differences in paired t-tests. The significant differences are observed for some of the same support services as in previous comparisons. *Prepared materials* ($t(49)=2.648$, $p=0.011$, $r=0.354$), *email to a teacher* ($t(33)=3.527$, $p=0.001$, $r=0.523$), *face to face or online chat with students* ($t(35)=2.046$, $p=0.048$, $r=0.327$), and *building a community of practice* ($t(32)=2.935$, $p=0.006$, $r=0.461$). Each of these significant differences in means shows that participants expected the support service to be more useful in the future compared with their actual experience in the first semester.

Table 4-4: Means and standard deviations for actual Survey 2 versus expected Survey 2

	Survey 2 Actual usefulness	Survey 2 Expected usefulness
Prepared materials		
MEAN	2.04	1.78
SD	0.925	0.932
Email to a teacher		
MEAN	1.97	1.65
SD	0.969	0.950
face to face or online chat with students		
MEAN	1.89	1.61
SD	0.854	0.728
Building a community of practice		
MEAN	2.12	1.70
SD	0.927	0.770

To summarise the above findings, there were a small number of significant differences in comparisons between the three data sets: expected usefulness of support services in Survey 1, actual usefulness of support services in Survey 2, and expected usefulness of support services in Survey 2. Significant differences were found in ratings for *prepared materials* in all three tests. The findings show that in Survey 2 participants' expectations for some support services had lowered since Survey 1; their actual experience of some support services had been less useful than expected; yet they still expected most support services to be more useful in the latter part of the year than in the months prior.

Frequency data also indicates changes over time in actual student use of some support services. Figure 4-7 below shows that for *email to support staff*, *peer support forum* posts, and youtube video (*prepared materials*) views, similar patterns of usage emerged. For each of the monitored support service types, student usage peaked significantly in March, while another smaller usage peak was observed in May. These results present only the frequency of posted messages and the frequency of youtube views: they do not account for unmonitored usage. Unmonitored usage of these support services could include for example, students who share

email support messages with other students or reread them, students who read messages posted in the peer support forum without posting, or students who download the tutorial videos and review them.

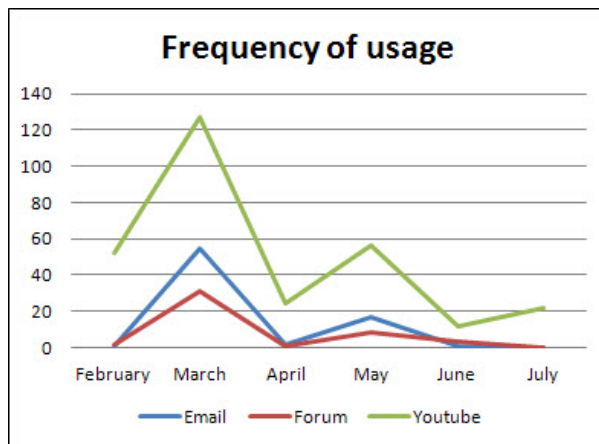


Figure 4-7: Frequency of support service usage over time

In qualitative feedback, a number of participants indicated that some form of face to face instruction and support, such as the workshops, would have benefited them at the first possible opportunity. In Survey 2, after workshops had finished, participants suggested that “supports need to be given at the beginning of the course” and that “I just wish I had more time, especially at the beginning of the year, to come to grips with this.” Although many felt that workshops would have benefited them early in the course schedule, some also commented that workshops should be repeated in stages throughout the year. Workshops scheduled early in the year would support essential skills and concepts and save students valuable time: “I'd already had a play but it was very much hit and miss - the workshop made everything clearer and much easier for me to use.” Workshops scheduled later in the year would support understanding of goals and methods for the eportfolio assignment due at course completion: “I know how to get to it and I felt better at the time but haven't really looked thoroughly at it again since - too focused on the 'now' rather than the 'later'.”

Themes identified in email and forum data are listed in Table 4-5 below, and include 12 themes occurring in four categories.

Table 4-5: Qualitative themes from email and forum posts

Category	Theme
Registration Error	User Error
	System Error
Questions and concerns	About security
	About storage stage
	About presentation stage
	About access stage
Announcement	About issues faced
	Expressing optimism and thanks
	Encouraging others
	Of triumph
Request	For workshop support
	For other support

The content of email and forum messages also exhibited change over time. Student concerns and questions about security were raised only in the first two months of the course year. Almost all email messages to support staff in March contained a request for face to face support, alongside the message's main theme. However, after the on-location workshops were announced, assuring students of a date and location for face to face support, these requests ceased. In emails to support staff, just over half of all instances of the theme "expressions of optimism about achieving eportfolio goals" occurred in the latter half of the six month collection period. The theme "notification of success or attainment of goals" was also expressed more frequently in later months, with 80% of instances of this theme occurring in the latter half of the data collection period.

4.3 Research Question 3:

In what ways is the use of support services associated with general demographic and background factors?

Demographic and background factors that were surveyed include age, gender, ethnicity, highest qualification, and years of experience in endorsement area. As noted in section 3.3, correlation results for demographic data are inverted due to the practice of valuing Likert scale values with 1 as the most positive rating. For example, the positive correlation for *prepared materials* versus *age group* below indicates that participants in lower age groups gave more positive ratings for this support type.

a. Age

Participant ages were categorised in nine age groups ranging from *less than 25* to *greater than 60* in increments of 5 years per group. The group that was mean, median and mode for this data set was participants aged *46-50 years* Figure 4-8 below.

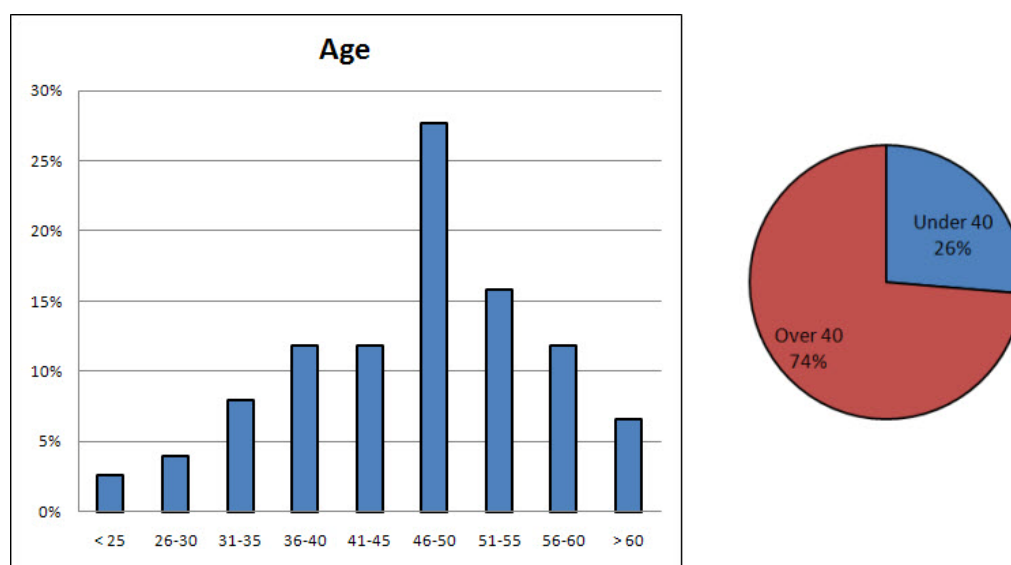


Figure 4-8: Participant age

Survey 1 results (see Table 4-6 below) showed no significant correlations between *age group* and *expected usefulness of support services*. In Survey 2, participants in lower age groups rated *prepared materials* more positively: the effect size for this correlation was large. Participants in lower age groups also provided more positive ratings for the actual experienced usefulness of *prepared materials*. Participants in lower age groups provided more positive ratings for the actual usefulness of *community of practice*, also with a large effect size.

Table 4-6: Age group versus support service usefulness ratings

Age versus usefulness of support services	Survey 1 age versus expected usefulness	Survey 2 age versus expected usefulness	Survey 2 age versus actual usefulness
Prepared materials	r (61)= -0.217	r (31)= 0.500** p = 0.004	r (32)= 0.382* p = 0.031
Email to support staff	r (60)= -0.038	r (30)= 0.244	r (25)= 0.102
Email to a student	r (57)= 0.036	r (26)= 0.126	r (24)= 0.102
Email to a teacher	r (59)= -0.021	r(27) = 0.154	r (22)= 0.339
Chat with teacher	r (60)= -0.058	r(26) = 0.164	r (17)= 0.320
Chat with support staff	r (60)= -0.129	r26) = 0.054	r (22)= 0.096
Chat with students	r (60)= -0.092	r(25) = 0.109	r (21)= 0.081
Community of practice	r (55)= 0.253	r(27) = 0.014	r (22)= 0.451* p = 0.035
Friends and family	r (58)= -0.176	r(22) = 0.308	r (23)= -0.092

* p<.05 ** p<.01

b. Gender

Survey participants included 88% (59 participants) women and 12% (8 participants) men. A further 31 participants did not state their gender. There were no significant correlations between gender and *support service usefulness*: including tests with expected usefulness in Survey 1 and Survey 2 and actual usefulness in Survey 2.

c. Ethnicity

The majority of valid participants (68%) identified solely as *Pākehā*¹. Identification solely with *Māori*² ethnicity accounted for 5% of participants while *other European* constituted 12% (see Figure 4-9 below). Some participants identified with multiple ethnicities, including 8% defining themselves as both *Pākehā and Māori*, 1% as *Pākehā and Other European*, and 1% as *Māori and Other European*. A total of 22 participants did not state their ethnicity.

¹ *Pākehā* is a term in the *Māori* language (*te reo Māori*) used to refer to New Zealand citizens of European decent.

² *Māori are the indigenous people of New Zealand (Aotearoa)*

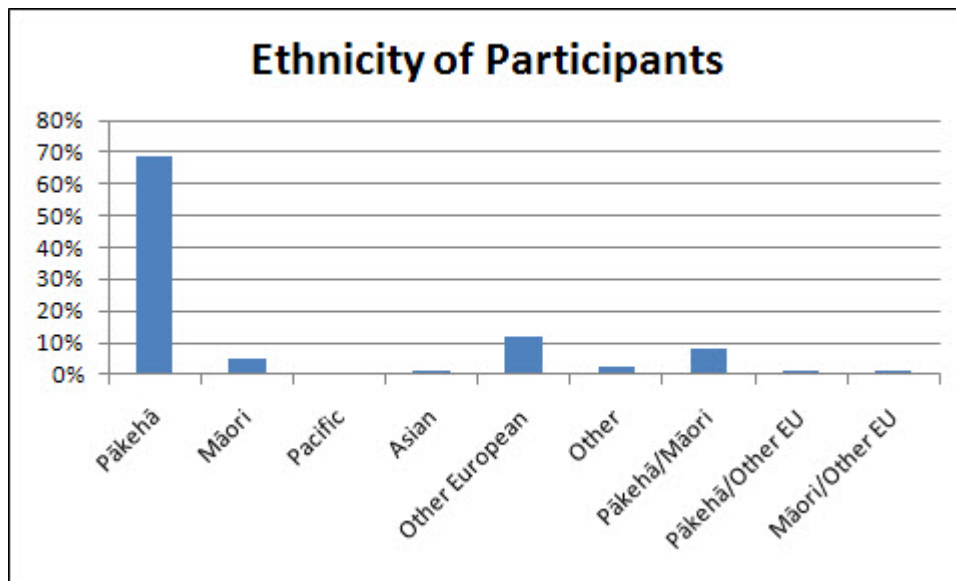


Figure 4-9: Participant ethnicity

Correlations were calculated between each ethnicity and ratings of support service usefulness (expected and actual). Participants who identified with two ethnicities were treated in correlations as contributing one data point to each ethnicity. In all of these tests there were only two significant correlations, both existing between participant identification with *Māori* ethnicity and ratings of *actual experienced usefulness* of support services prior to completion of Survey 2. Both correlations had large effect sizes. In Survey 2, participants who identified as *Māori* provided significantly more positive ratings for actual usefulness of *email to a student* ($r=-0.430$, $p=0.036$) as well as for actual usefulness of support from *building a community of practice* ($r=-0.428$, $p=0.047$).

d. *Highest qualification*

The majority of participants held a bachelor degree or higher (see Figure 4-10 below). There was just one respondent with *no formal qualification* and 14% held an *undergraduate diploma*.

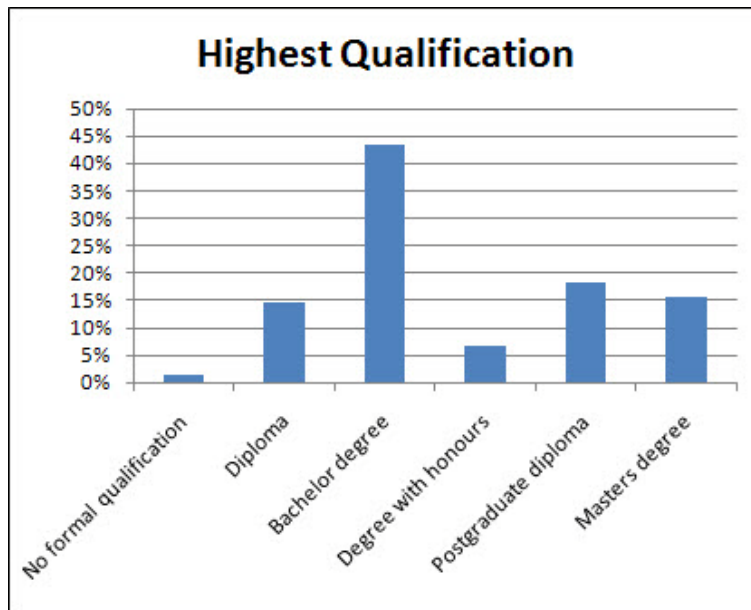


Figure 4-10: Participants' highest qualification held

In analysis of correlations between *highest qualification* held and support service usefulness (expected and actual), only two significant correlations were observed. In Survey 1, participants with a higher level of qualification tended to expect *email to a student* to be less useful ($r=0.287$, $p=0.031$). In Survey 2, participants with a higher level of qualification tended to expect support from *friends and family* to be less useful ($r=0.477$, $p=0.025$).

There was no significant correlation found between *age* and *highest qualification* level.

e. *Years of experience in endorsement area*

Participant ratings for experience in their endorsement area ranged from none to 25 years or more, with the majority (39.5%) indicating *4 years or less* (see Figure 4-11 below).

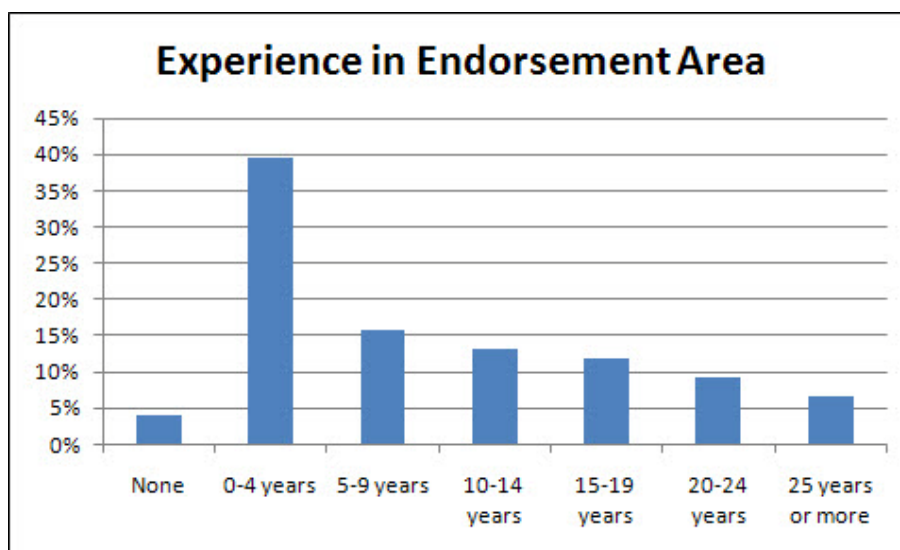


Figure 4-11: Years of experience (professional or personal) in endorsement area

From analysis of correlations between *experience in endorsement area* and *support service usefulness* (expected and actual), only one significant correlation was observed. In Survey 1, participants with more experience in their endorsement area provided less positive ratings for expected usefulness of *face to face workshop or online chat with support staff* ($r=0.311$, $p=0.016$).

There were no significant correlations found between *age* and *experience in endorsement area* or between *highest qualification* and *experience in endorsement area*.

4.4 Research Question 4:

Are there significant relationships between experience with digital technologies and attitudes toward portfolio use?

A series of Pearson correlation tests were conducted between each question on participant experience with digital technologies and each question on participant attitudes toward portfolio use.

In Survey 1, as participants started their course in specialist teaching, there were three significant correlations between experience and attitudes (see Table 4-7 below). Participants with a higher level of experience in *creating and editing computer documents* rated portfolios

as more *useful in adult education*. Participants with more experience in *using social networking tools* rated portfolios as more *useful in adult education*, and rated higher the likelihood they *will continue to use a portfolio in the future*.

Table 4-7: Survey 1 results for experience versus attitudes

Survey 1 results for experience versus attitudes		Attitudes on portfolio use: Q30-33			
		useful in adult ed	will continue to use	will encourage others	supports subject knowledge
Experience with digital technologies: Q29a-29d	Computer documents	r (53)= 0.339* p = 0.013	r (51)= 0.130	r (50)= 0.033	r (50)= 0.260
	Web pages	r (53)= 0.166	r (51)= 0.194	r (50)= 0.191	r (50)= 0.169
	Social networking tools	r (53)= 0.301* p = 0.029	r (51)= 0.352* p = 0.011	r (50)= 0.220	r (50)= 0.222
	Eportfolios	r (52)= 0.073	r (50)= 0.171	r (49)= 0.187	r (49)= 0.176

* p<.05

In Survey 2 results (see Table 4-8 below) ratings for *experience with eportfolios* were significantly correlated with positive increases in all four attitude ratings. In other words, students who rated their experience with eportfolios more positively had more positive attitudes toward portfolio use in all related areas. The strongest effect sizes in this set were with the likelihood participants *will continue to use a portfolio in the future* and with the extent to which they think *portfolios can enhance and support subject knowledge throughout the course*.

Another significant correlation, though not as large in effect size, was identified in Survey 2 results, between *experience using social networking tools* and the extent to which participants think *portfolios can enhance and support subject knowledge throughout the course*.

Table 4-8: Survey 2 results for experience versus attitudes

Survey 2 results for experience versus attitudes		Attitudes on portfolio use: Q9-12			
		useful in adult ed	will continue to use	will encourage others	supports subject knowledge
Experience with digital technologies: Q5a-5d	Computer documents	r (53)= 0.193	r (51)= 0.129	r (51)= 0.055	r (48)= 0.222
	Web pages	r (53)= 0.163	r (51)= 0.138	r (51)= 0.038	r (48)= 0.181
	Social networking tools	r (53)= 0.032	r (51)= 0.105	r (51)= -0.045	r (48)= 0.286* p = 0.049
	Eportfolios	r (53)= 0.330* p = 0.016	r (51)= 0.409** p = 0.003	r (51)= 0.338* p = 0.015	r (48)= 0.479** p = 0.001

* p<.05 ** p<.01

In Survey 1, students who expected to be able to support others in portfolio use tended to provide higher ratings for their own experience with all four types of digital technologies (see Table 4-9 below). For experience with *computer documents*, *web pages*, *social networking tools*, and *eportfolios* the correlations had large effect sizes.

No significant correlations were observed in Survey 2 between experience with digital technology and expecting to be able to support others throughout the rest of the course. However, participants who indicated that they had supported others in portfolio/eportfolio use by Survey 2 tended to give high ratings to their own experience with *computer documents*, *social networking tools*, and *eportfolios*. The relationship between having supported others by Survey 2 and experience with eportfolios was strong, with a significance value below 0.001 and a large effect size.

Table 4-9: Results for experience versus supporting others

Supporting others versus experience with technology		Survey 1 could support others	Survey 2 could support others	Survey 2 have supported others
Experience with digital technologies	Computer documents	r (25)= 0.511** p = 0.009	r (43)= 0.144	r (50)= 0.339* p = 0.016
	Web pages	r (25)= 0.547** p = 0.005	r (43)= 0.182	r (50)= 0.242
	Social networking tools	r (25)= 0.559** p = 0.004	r (43)= 0.212	r (50)= 0.355* p = 0.011
	Eportfolios	r (25)= 0.488* p = 0.013	r (43)= 0.301	r (50)= 0.501*** p = 0.000

* p<.05 ** p<.01 *** p<.001

Participants' expectations that they could support others in eportfolio use were correlated with all four attitude ratings in Survey 1 (see Table 4-10 below). Only one significant correlation was observed in this data set for Survey 2: participants who had supported others prior to Survey 2 also felt that portfolio use supports subject knowledge.

Table 4-10: Results for attitudes versus supporting others

Supporting others versus attitudes toward portfolio use		Survey 1 could support others	Survey 2 could support others	Survey 2 have supported others
Attitudes toward portfolio use	useful in adult ed	r (19)= 0.487* p = 0.034	r (42)= 0.146	r (49)= 0.022
	will continue to use	r (20)= 0.603** p = 0.005	r (42)= 0.105	r (48)= -0.013
	will encourage others	r (19)= 0.516** p = 0.024	r (41)= 0.169	r (47)= 0.079
	supports subject knowledge	r (19)= 0.577* p = 0.010	r (38)= 0.213	r (44)= 0.420** p = 0.005

* p<.05 ** p<.01

A small set of participants in Survey 1 rated their experience with *computer documents* as *basic* or *competent* and their experience with *web pages*, *social networking tools*, and *eportfolios* as *none* or *basic*. This group could be considered as a low-experience group with regards to digital technologies and possibly in greater need of support services for eportfolio use. Themes expressed in qualitative feedback by these participants focused on time constraints and course workload. "Still feel very unsure about using them. I have been really busy just keeping up with the study, learning how to use mind maps so have not had the time or energy to work out e portfolios yet", "because it has been so hard to get my head around the eportfolio, I am way behind the structuring of a portfolio of work."

When asked to voice their concerns about portfolio use in the course, these participants used first person narrative voice and focused on their lack of knowledge and experience with eportfolios. Concerns included "I have absolutely no clue about the e portfolios", "don't have many [concerns] if I do a hard copy, but I have plenty if I do an eportfolio", "Yeck! I don't want to go there, but will probably push myself". These participants also emphasised the need for face to face support or an induction process for eportfolio use. "Really feel we need more support in this area before beginning to do it on our own", "it is just the concern of not having a real person beside me to assist".

A theme that was expressed consistently by participants in Survey 1 and Survey 2 was *lack of time*. In Survey 1, comments included “I need time to get my head around it but meanwhile it feels like everyone is in there contributing to the forums from readings which I have not yet done and I am in panic mode”, “will take a lot of time I expect, which I resent in some ways as the study itself is taking a long time anyway”, and “time management – this is a whole new learning component for those of us that have not had prior experience with e-Portfolios.” While in Survey 2, concerns about time continued, with some becoming more specific about the nature of time concerns: “concerns are that time constraints have meant that e-portfolio is on the backburner for the time being so will need to make time to update this”, “I feel very behind despite putting in heaps of time”, “the time it may take to be confident using it”.

An even smaller sub-set of participants gave high ratings of advanced or competent for experience with all four rated digital technologies, but each of these participants participated in only one survey: either Survey 1 or Survey 2. Therefore, it was not possible to determine any change over time in the feedback themes for participants with consistently high ratings for experience with digital technologies. The ratings provided by these participants, *advanced* or *competent* in each case of experience rating, did not factor into the paired t-tests discussed above for the same reason: that the participants provided responses in only one survey. A clear difference between qualitative feedback provided by these participants compared with the low-experience sub-set is that high-experience participants had less concerns to express. They also tended to focus on a specific concern in brief language or key words, without the use of first person narrative voice and full sentences. One participant simply entered “none” in the feedback field for concerns, another suggested a concern was “getting to grips with how to use eportfolios” though they rated themselves as *competent* in eportfolio use. The only participant who provided maximum ratings of *advanced* for experience with all four rated digital technologies left the feedback field for concerns blank in Survey 1; they did not participate in Survey 2, or their Survey 1 and Survey 2 results were not matched .

4.5 Research Question 5:

Are there significant relationships between participants' experience and attitudes with eportfolios and digital technologies compared with the types of support services they utilise?

Participants were also asked to rate their experience with eportfolios and digital technologies (see appendix 8.1: Survey 1, question 29; appendix 8.2: Survey 2, question 5). Four questions in each survey were also designed to gauge participant attitudes toward eportfolios (Survey 1, questions 30-33; Survey 2, questions 9-12).

All identified significant results ($p < 0.05$) in two tailed correlation tests were positive. This consistent result indicates that where significant correlations were observed, participants who were more experienced with digital technologies also rated the support services as more useful. Similarly, where significant correlations were observed for questions related to attitudes, participants with more positive attitudes toward portfolio use also provided higher ratings for usefulness of support services.

Support service usefulness ratings include expected usefulness ratings in Survey 1, expected usefulness ratings in Survey 2, and actual usefulness ratings in Survey 2. The results for Pearson correlation tests are represented in three datasets for experience ratings versus support service usefulness ratings, as well as three datasets for attitude ratings versus support service usefulness ratings. For example, ratings for *experience with digital technologies* versus *expected support service usefulness* ratings in Survey 1 results in one dataset (see Table 4-11 below); ratings for *experience with digital technologies* versus *support service usefulness ratings* in Survey 2 results in a second dataset (see Table 4-12 below).

Experience

In Survey 1, of the four types of experience rated only one type of experience exhibited significant relationships with expected usefulness of the support types rated. The data (see

Table 4-11) shows that participants with more experience *creating and editing web pages* provided higher ratings for expected usefulness of support from *friends and family* and *face to face or online chat with a teacher*. The effect size in both cases was medium.

Table 4-11: Survey 1 experience versus expected usefulness

Survey 1 results for experience versus expected usefulness		skill and experience with digital technologies 29a-29d			
		computer documents	web pages	social networking	eportfolios
expected usefulness of support type: Q34a-34k	Prepared materials	r (61)= 0.007	r (61)= 0.019	r (61)= -0.067	r (60)= 0.096
	Email to support staff	r (60)= -0.115	r (60)= 0.106	r (60)= 0.023	r (59)= 0.053
	Email to a student	r (57)= -0.074	r (57)= 0.167	r (57)= 0.127	r (56)= 0.101
	Email to a teacher	r (59)= 0.032	r(59) = 0.224	r (59)= -0.013	r (58)= 0.160
	Chat with teacher	r (60)= -0.053	r(60) = 0.299* p = 0.020	r (60)= 0.030	r (59)= 0.056
	Chat with support staff	r (60)= -0.042	r(60) = 0.169	r (60)= -0.015	r (59)= -0.013
	Chat with students	r (60)= -0.237	r(60) = 0.097	r (60)= 0.027	r (59)= 0.013
	Community of practice	r (55)= 0.076	r(55) = 0.224	r (55)= 0.045	r (54)= -0.006
	Friends and family	r (58)= 0.055	r(58) = 0.316* p = 0.016	r (58)= 0.127	r (57)= 0.232

* p<.05

In Survey 2, two significant correlations were identified (see Table 4-12 below) between ratings of experience and expectations of the usefulness of support types for the remainder of the year. Participants with more experience *interacting with social networking tools* expected *prepared materials* to be more useful. Participants with more experience *creating and editing an eportfolio* expected support from *friends and family* to be more useful. Effect sizes for both were medium.

Table 4-12: Survey 2 experience versus expected usefulness

Survey 2 results for experience versus expected usefulness		skill and experience with digital technologies Q5a-5d			
		computer documents	web pages	social networking	eportfolios
expected usefulness of support type: Q14a-14i	Prepared materials	r (50)= 0.129	r (50)= 0.038	r (50)= 0.301* p = 0.034	r (50)= 0.133
	Email to support staff	r (49)= -0.018	r (49)= 0.049	r (49)= 0.163	r (49)= 0.021
	Email to a student	r (44)= 0.245	r (44)= 0.118	r (44)= 0.019	r (44)= -0.057
	Email to a teacher	r (44)= 0.076	r (44)= 0.052	r (44)= -0.025	r (44)= 0.144
	Chat with teacher	r (42)= -0.092	r (42)= -0.145	r (42)= 0.044	r (42)= 0.228
	Chat with support staff	r (45)= -0.253	r (45)= 0.268	r (45)= -0.104	r (45)= -0.017
	Chat with students	r (44)= -0.188	r (44)= -0.243	r (44)= -0.076	r (44)= 0.164
	Community of practice	r (44)= -0.071	r (44)= -0.104	r (44)= -0.017	r (44)= 0.237
	Friends and family	r (39)= 0.142	r (39)= 0.136	r (39)= 0.288	r (39)= 0.327* p = 0.042

* p<.05

Also in Survey 2, five significant correlations were identified between ratings of experience and perceptions of the actual usefulness of support types during the preceding months (see Table 4-13). Participants experienced in *interacting with social networking tools* also reported more positive ratings for actual usefulness of *prepared materials* and of *building a community of practice*. Experience *creating and editing an eportfolio* was also correlated with ratings for usefulness of *prepared materials*, as well as with *face to face or online chat with teacher*, and *face to face or online chat with students*. Effect sizes for all of these correlations were in the medium range, except for *social networking versus community of practice*, which can be considered a large effect size.

Table 4-13: Survey 2 experience versus actual usefulness

Survey 2 results for experience versus actual usefulness		skill and experience with digital technologies Q5a-5d			
		computer documents	web pages	social networking	eportfolios
actual usefulness of support type: Q13a-13i	Prepared materials	r (54)= 0.191	r (54)= 0.208	r (54)= 0.310* p = 0.023	r (54)= 0.290* p = 0.033
	Email to support staff	r (43)= -0.075	r (43)= -0.076	r (43)= 0.025	r (43)= 0.134
	Email to a student	r (43)= 0.184	r (43)= 0.171	r (43)= 0.060	r (43)= 0.128
	Email to a teacher	r (39)= 0.083	r (39)= 0.007	r (39)= 0.146	r (39)= 0.130
	Chat with teacher	r (30)= -0.080	r (30)= -0.128	r (30)= 0.238	r (30)= 0.365* p = 0.047
	Chat with support staff	r (42)= -0.008	r (42)= -0.069	r (42)= 0.061	r (42)= 0.198
	Chat with students	r (40)= -0.169	r (40)= 0.025	r (40)= 0.099	r (40)= 0.361* p = 0.022
	Community of practice	r (40)= 0.183	r (40)= 0.194	r (40)= 0.377* p = 0.017	r (40)= 0.286
	Friends and family	r (43)= -0.105	r (43)= -0.187	r (43)= 0.051	r (43)= 0.087

* p<.05

One participant provided ratings that aligned with several of the above correlations: such as low ratings in Survey 1 for both *prepared materials* and *experience creating web pages*. This participant noted “I had never even heard of eportfolios before the course, but feel excited about having a go, just need to find the time to play”. Another participant, had maximum ratings in Survey 1 for *experience creating web pages* as well as for usefulness of support from *chat with teacher* and *friends and family*. This participant stated they “really feel we needed more support in this area before beginning to do it on our own. I am very IT savvy and still found it a lot to get my head around.”

One participant whose ratings very closely reflected the above quantitative results is referred to in this report as *participant A*. In Survey 1, this participant gave low usefulness ratings for the support types that are correlated with *experience with eportfolios* in the quantitative results above. The participant provided other support types with higher ratings. *Participant A’s* rating for experience with eportfolios rose two steps on the rating scale from *none* (value=4) to *competent* (value=2). Although this participant had low ratings for experience with the other rated digital technologies in both Survey 1 and Survey 2, they were able to successfully develop competence with eportfolio use. In Survey 1, this participant worried that “I have no

idea how to set [an eportfolio] up and the online resources are pitched to a level of knowledge that is greater than mine”; yet by Survey 2 could explain that “a couple of fellow students have come over to the house for the day and I scaffolded them through making and using their portfolio. I have supported some that contacted me online.”

Attitudes

In Survey 1, several significant relationships were found between participant attitudes toward portfolio use and their rating of support service usefulness (see Table 4-14). The largest effect size occurred for the relationship between support from *friends and family* and the intention *to encourage others in the workplace to use a portfolio*. Relationships with significance values below 1% were also evident in correlations between usefulness of *face to face or online chat with a student* and three attitude ratings. These include the view that portfolios are *useful in adult education*, the intention to *continue using a portfolio* in the future, and the view that portfolio use *supports subject knowledge* throughout the course. The remaining significant relationships showed medium effect sizes (see Table 4-14 below).

Table 4-14: Survey 1 attitudes versus expected usefulness

Survey 1 results for attitudes versus expected usefulness		attitudes on portfolio use Q30-33			
		useful in adult ed	will continue to use	will encourage others	supports subject knowledge
expected usefulness of support type: Q34a-34k	Prepared materials	r (51)= 0.231	r (49)= 0.097	r (49)= 0.199	r (49)= 0.189
	Email to support staff	r (51)= 0.279* p = 0.048	r (49)= 0.222	r (49)= 0.149	r (49)= 0.317* p = 0.027
	Email to a student	r (48)= 0.318* p = 0.028	r (46)= 0.165	r (46)= 0.134	r (45)= 0.347* p = 0.020
	Email to a teacher	r (50)= 0.118	r (48)= 0.051	r (47)= -0.019	r (47)= 0.177
	Chat with teacher	r (52)= 0.245	r (49)= 0.191	r (48)= 0.238	r (49)= 0.075
	Chat with support staff	r (51)= 0.334* p = 0.017	r (48)= 0.303 p = 0.036	r (48)= 0.245	r (49)= 0.324* p = 0.023
	Chat with students	r (51)= 0.382** p = 0.006	r (48)= 0.389** p = 0.006	r (48)= 0.321* p = 0.026	r (49)= 0.377* p = 0.008
	Community of practice	r (48)= 0.109	r (46)= 0.039	r (46)= 0.160	r (47)= 0.228
	Friends and family	r (51)= 0.345* p = 0.013	r (48)= 0.342* p = 0.017	r (48)= 0.529*** p = 0.000	r (49)= 0.302* p = 0.035

* p<.05 ** p<.01 *** p<.001

A large number of significant correlations were also evident between attitude ratings and expected usefulness ratings in Survey 2 (see Table 4-15). Participants who rated support from *email to a teacher* highly were also very likely to provide positive ratings in all attitudes toward portfolio use. In all four cases the significance values were high and effect sizes were medium to large. High significance values were also observed in two other correlations. Usefulness of support from *friends and family* was correlated with the intention to *continue using a portfolio* in the future, as was usefulness of support from *email to support staff*. A number of other significant correlations are evident (see Table 4-15 below).

Table 4-15: Survey 2 attitudes versus expected usefulness

Survey 2 results for attitudes versus expected usefulness		attitudes on portfolio use: Q9-12			
		useful in adult ed	will continue to use	will encourage others	supports subject knowledge
expected usefulness of support type: Q14a-14i	Prepared materials	r (49)= 0.222	r (47)= 0.290* p = 0.048	r (48)= 0.233	r (45)= 0.353* p = 0.017
	Email to support staff	r (48)= 0.364* p = 0.011	r (46)= 0.378** p = 0.010	r (47)= 0.198	r (44)= 0.364* p = 0.015
	Email to a student	r (43)= 0.194	r (41)= 0.217	r (43)= 0.206	r (41)= 0.201
	Email to a teacher	r (43)= 0.425** p = 0.004	r (41)= 0.440** p = 0.004	r (43)= 0.383* p = 0.011	r (42)= 0.400** p = 0.009
	Chat with teacher	r (41)= 0.270	r (40)= 0.150	r (42)= 0.055	r (39)= 0.187
	Chat with support staff	r (44)= 0.210	r (44)= 0.096	r (44)= 0.076	r (40)= 0.063
	Chat with students	r (43)= 0.123	r (42)= 0.143	r (43)= 0.229	r (40)= 0.104
	Community of practice	r (43)= 0.309* p = 0.044	r (43)= 0.211	r (44)= 0.241	r (41)= 0.161
	Friends and family	r (38)= 0.323* p = 0.048	r (47)= 0.449** p = 0.005	r (37)= 0.245	r (34)= 0.400* p = 0.019

* p<.05 ** p<.01

Lastly, Survey 2 questions on attitudes toward eportfolio use were compared with actual usefulness of support services. Fewer correlations were found in this data set. None of the support services were correlated with more than two attitude ratings. The most significant relationship showed that participants who had used *prepared materials* the most also viewed portfolios as *supporting subject knowledge throughout the course* (see Table 4-16 below).

Table 4-16: Survey 2 attitudes versus actual usefulness

Survey 2 results for attitudes versus actual usefulness		attitudes on portfolio use: Q9-12			
		useful in adult ed	will continue to use	will encourage others	supports subject knowledge
actual usefulness of support type: Q13a-13i	Prepared materials	r (53)= 0.159	r (51)= 0.216	r (51)= 0.138	r (48)= 0.461** p = 0.001
	Email to support staff	r (43)= 0.234	r (40)= 0.250	r (41)= 0.167	r (39)= 0.270
	Email to a student	r (43)= 0.188	r (40)= 0.196	r (40)= 0.328* p = 0.039	r (39)= 0.146
	Email to a teacher	r (39)= 0.329* p = 0.041	r (36)= 0.250	r (37)= 0.319	r (35)= 0.362* p = 0.032
	Chat with teacher	r (30)= -0.062	r (28)= 0.080	r (29)= 0.200	r (27)= 0.109
	Chat with support staff	r (41)= 0.129	r (41)= 0.123	r (40)= 0.353* p = 0.025	r (36)= 0.287
	Chat with students	r (39)= -0.044	r (38)= 0.221	r (38)= 0.346* p = 0.033	r (35)= 0.383* p = 0.023
	Community of practice	r (40)= -0.002	r (37)= 0.128	r (38)= 0.187	r (36)= 0.365* p = 0.028
	Friends and family	r (42)= 0.300	r (40)= 0.323* p = 0.042	r (40)= 0.196	r (39)= 0.289

* p<.05 ** p<.01

To collect data on another aspect of participant attitudes, in both Survey 1 and Survey 2 participants were asked whether they *personally could support others in using portfolios/eportfolios*. In Survey 2, participants were also asked whether since the beginning of the course they *have supported others in using portfolios/eportfolios*.

Significant correlations were found (see Table 4-17 below), though the correlations in the *expected usefulness of support services* data set were different from those in the *actual usefulness of support services* data set. In Survey 1, participants *expecting to support others*

provided higher ratings for the expected usefulness of *email to a student*, *email to a teacher*, and *community of practice*. Furthermore, participants who had expected in Survey 1 to help others provided high ratings in Survey 2 for the actual usefulness of *email to support staff*. The effect sizes of these correlations were large.

In Survey 2, participants *expecting to support others* provided high ratings for actual usefulness of *email to support staff* and *chat with support staff*. They also provided high ratings for *chat with teacher* and *chat with students*. Those who answered in Survey 2 that they *had actually supported others* rated *prepared materials* highly, as well as *chat with students*.

Table 4-17: Comparison of tables for supporting others versus expected usefulness and supporting others versus actual usefulness showing change over time

	Supporting others versus expected usefulness			Supporting others versus actual usefulness		
	Survey 1 could support others	Survey 2 could support others	Survey 2 have supported others	Survey 1 could support others	Survey 2 could support others	Survey 2 have supported others
Prepared materials	r (24)= 0.055	r (40)= 0.188	r (46)= 0.114	r (11)=0.259	r (43)= 0.269	r (50)= 0.331* p = 0.019
Email to support staff	r (23)= 0.015	r (39)= 0.095	r (45)= 0.019	r (9)=0.672* p = 0.047	r (37)= 0.438** p = 0.007	r (39)= 0.232
Email to a student	r (22)= 0.463* p = 0.030	r (35)= -0.015	r (40)= -0.002	r (9)= -0.135	r (38)= -0.023	r (39)= -0.023
Email to a teacher	r (23)= 0.517* p = 0.011	r (35)= 0.186	r (40)= 0.052	r (7)=0.205	r (33)= 0.283	r (35)= 0.072
Chat with teacher	r (24)= -0.276	r (35)= 0.230	r (39)= 0.152	r (5)=0.612	r (26)= 0.431* p = 0.028	r (27)= 0.222
Chat with support staff	r (22)= 0.280	r (38)= -0.016	r (41)= -0.014	r (8)=0.354	r (35)= 0.465** p = 0.005	r (38)= 0.226
Chat with students	r (23)= 0.066	r (36)= 0.026	r (40)= 0.104	r (7)= -0.059	r (32)= 0.373* p = 0.035	r (36)= 0.413* p = 0.012
Community of practice	r (20)= 0.539* p = 0.014	r (37)= 0.021	r (40)= 0.136	r (6)= -0.156	r (34)= 0.294	r (37)= 0.236
Friends and family	r (23)= 0.321	r (34)= 0.074	r (36)= -0.080	r (9)=0.141	r (35)= 0.008	r (40)= -0.211

* p<.05 ** p<.01

Qualitative feedback from one of the participants is representative of similar comments made by others. Moreover, quantitative results given by this participant in Survey 1 and Survey 2 for use of support services and ability to support others reflect the correlations shown in the findings above and in previous sections. In Survey 1, this participant was positive about

portfolio use, but expressed doubt about workload, time management, and learning methods for eportfolio skills. “I know the possibilities of eportfolios are a great idea for use on the course and into the future, but I am a slow learner. There is not enough time to learn both content and how to use an eportfolio. If we had our laptops and did activities in a lecture room together this may help me. Otherwise it seems too much to learn at the same time.” In another feedback field, the same participant goes on to suggest “maybe an induction course on how to work the computer side of things in the holidays may have been beneficial for people like me.” This feedback is indicative of the relationship between experience, or lack of experience, with digital technologies and the types of support services that are considered useful. It may also highlight a relationship between attitudes toward portfolio use and support service needs. In this case the participant, like others in the group, rated themselves as low in experience, provided high attitude ratings, and expressed a preference for face to face support and formal allocation of time for eportfolio skills development.

Participant A, discussed in the *experience* section above, gave low ratings for experience with digital technologies, yet their ratings for attitudes were in most cases maximum. One attitude was rated as *don't know* in Survey 1, this was the likelihood that *participant A* would encourage others in the workplace to use a portfolio/eportfolio; yet in Survey 2 this rating also changed to the maximum rating of *very likely*.

4.6 Research Question 6:

Are there significant changes in participant experience and attitudes toward eportfolios over time?

Significant changes were observed for answers to only one of the four questions on experience with digital technologies. Paired sample t-tests showed that participants rated their *experience with eportfolios* significantly higher in Survey 2 than in Survey 1 ($t(25)=2.807$, $p=0.010$, $r=0.490$).

Table 4-18: Means and standard deviations for experience with eportfolios

	Survey 1	Survey 2
experience with eportfolios		
MEAN	2.46	2.31
SD	0.508	0.549

Although there was some change in participants' *experience with social networking tools*, as apparent in Figure 4-12 below, the change was not statistically significant. Minor changes can be observed in participant ratings of *experience with computer documents* and *experience creating and editing web pages*, but in both cases this was not statistically significant.

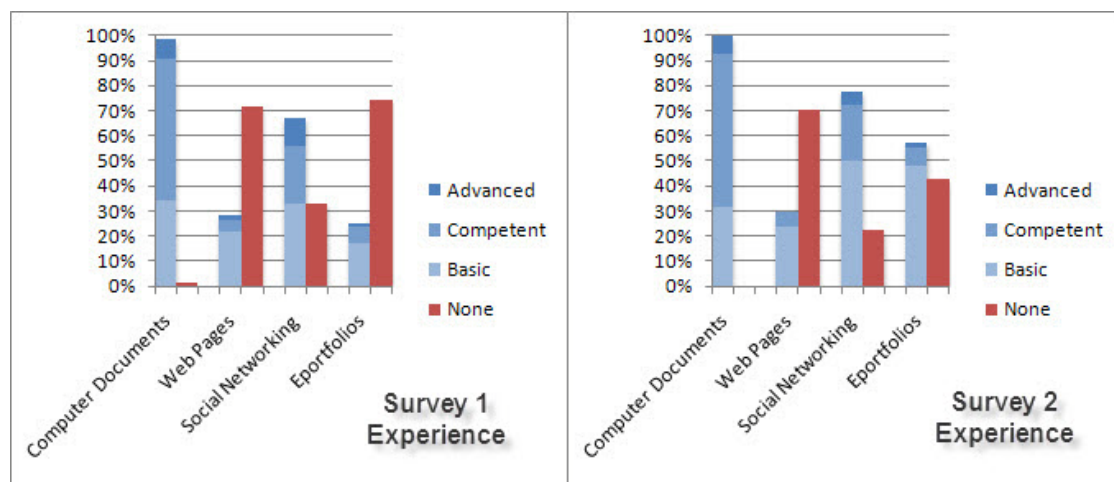


Figure 4-12: Survey 1 versus Survey 2 ratings for experience with digital technologies

Participants unclear of their attitudes toward portfolio use in Survey 1 (i.e. those who answered *don't know*) were able to form a clearer understanding of their attitudes toward portfolio use over time. There were fewer *don't know* ratings in Survey 2, accounting for the apparent increases in total positive ratings shown in Figure 4-13 below for Survey 2 compared with Survey 1. Totals for combined positive ratings in each case increase: from 80% to 98% for *useful in adult education*, 61% to 81% for *likely to continue using*, 51% to 81% for *likely to encourage others to use*, and 75% to 78% for *enhances subject knowledge*. However, the rating '*don't know*' was considered a missing value and discounted for dependent t-tests. Therefore, to the extent that the increases in positive totals resulted from decreases in *don't know* responses these increases did not impact on t-test results.

In results for dependent t-tests, change over time in attitude ratings was not significant. No significant variance was observed for attitude ratings in Survey 1 and Survey 2. This indicates that students who participated in both Survey 1 and Survey 2 did not significantly change any of the four attitudes toward portfolio use. Although fewer missing values of *don't know* accounted for general increases in positive ratings, there were no significant variances of means.

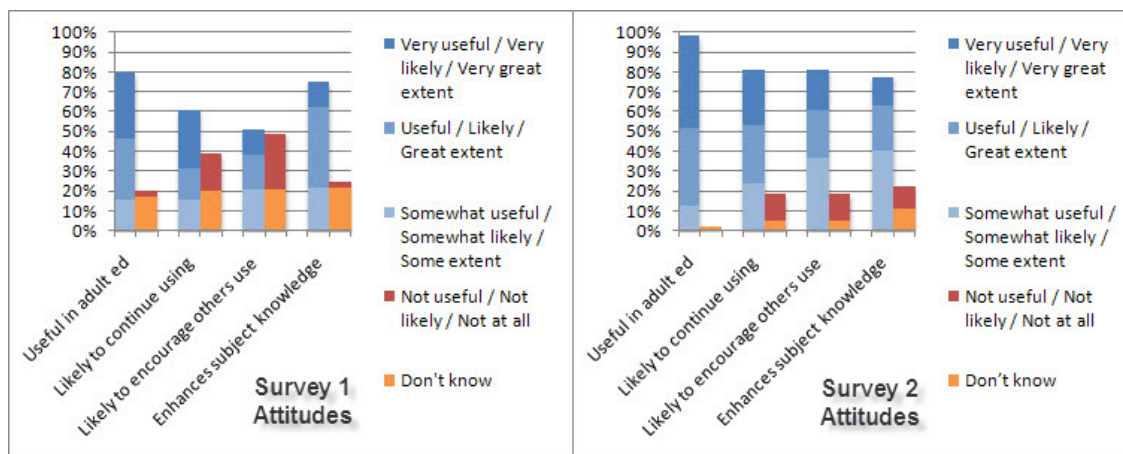


Figure 4-13: Survey 1 versus Survey 2 ratings for attitudes toward portfolios

Increases can be observed in the total number of positive answers to the question *do you think that you personally will be able to support students and teachers in using portfolios/eportfolios during the remainder of the study year?* However, paired sample t-tests ($t(10)=0.559$, $p=0.588$, $r=0.174$) indicate that changes were not statistically significant. Again, the change apparent in the totals for *yes* and *no* responses seems to be due to a marked decrease in *don't know* responses.

Similarly, comparing Survey 1 results for expecting to support others and Survey 2 results for having supported others so far in the study year yields no significant difference at all in dependent t-tests ($t(10)=0.00$, $p=1$, $r=0$). This means that participants who expected in Survey 1 to help others did in fact help others by Survey 2, just as those who did not expect to help others early on in fact by Survey 2 had not. Where the effect of *don't know* responses is excluded as a missing value, the percentage of students answering *yes* or *no* in each survey was identical.

The themes expressed in open answer questions in Survey 1 and Survey 2 do exhibit change over time and can be seen as an indication of a change in students' subjective attitudes to portfolio use. Themes were identified in verbal feedback to the question "what initial expectations and/or concerns do you have about using portfolios/eportfolios?" in Survey 1, and to the question "what expectations and/or concerns do you have now about using portfolios/eportfolios?" in Survey 2. A set of seven key themes were established from analysis of participant responses. A tally of instances for each theme was made with each instance of a theme counted, whether occurring in isolation as the one key theme within a participant response or grouped together with other themes in a complex participant response. The theme of *unfamiliarity* was most prevalent in Survey 1, while *lack of time* was more prevalent in Survey 2 and the theme of *positive potential* for eportfolio use also increased.

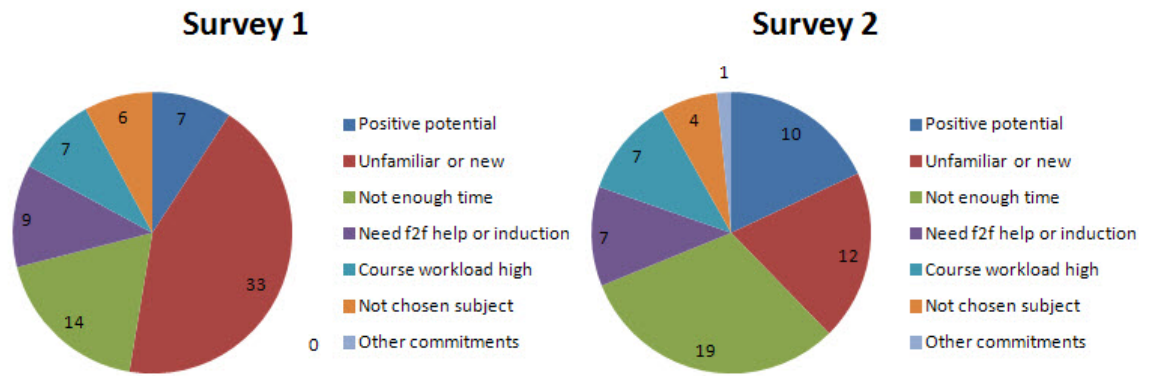


Figure 4-14: Frequency of instances for qualitative themes over time

5 Discussion

For each of the six research questions there are two sub-sections for discussion: these sub-sections are *interpretation of findings* and *practical relevance*. Interpretation of findings for each research question links to the analysis of findings for that question and aims to draw meaning from these findings through consideration of the review of literature, researcher observations, and connections with other findings for meta-inference (Tashakkori & Teddlie, 2010). Practical relevance for each research question aims to frame the findings and their meaning in terms of utility for persons involved in planning, funding or provision of course design and support services in adult education. Practical relevance serves to emphasise the contribution each research question makes toward forming a complete answer to the broader thesis aim and thus the advancement of knowledge in the field.

5.1 Research Question 1:

Which support services are utilised most?

- All support types were rated highly
- The support services utilised most were *prepared materials, email to support staff, and face to face workshop or online chat with support staff*.
- The only support type not directly associated with the course community, *support from friends and family*, was rated lower than all other support types.

a. Interpretation of findings

The highest three ratings in each survey, for expected usefulness (Survey 1: Q34 see appendix 8.1; Survey 2: Q14 see appendix 8.2) as well as actual usefulness (Survey 2: Q13 see appendix 8.2), were given for *prepared materials, email to support staff, and face to face workshop or online chat with support staff*. These three support types rely on a technology expert who is in close contact with the course community. The implication of this finding is that participants perceive a need for expert help from someone whose role is dedicated to providing that help.

Other support service types also received high ratings, so while technology expert support is important this does not diminish the need for other types of support. Participants expected support from face to face or online chat with teachers or other students to be highly useful. In practice, support from other students was still considered highly useful, yet support from teachers was rated lower than previously expected. This finding is most likely another symptom of the presence of a technology expert and the relative inexperience with eportfolio tools faced by teachers and students in the course. Communication time with teachers in such

a large course population is very valuable, so where a technology expert is available to answer questions about eportfolio use students may see this as an opportunity to restrict their interaction with teachers to pointed discussion on course content. Support services in this way can be compared to other uses of technology resources to pre-frame important skills so that class and teacher contact time can be optimised for higher level skills or subject-specific communication (Salter, Pang, & Sharma, 2009). The distance format of the course may have also impacted on these ratings, as students may have based their expectations for support from teachers on prior experience with daily lessons on campus. Furthermore, as this research took place in the founding year of the postgraduate specialist teaching course, most of the teachers were in a position of learning about eportfolio tools themselves and may not have been able to answer some of the students' technical questions.

Literature indicates (Kihc-Cakmak, Karatas, & Ocak, 2009; Palmer & Holt, 2010) that students feel that e-learning tools, including eportfolios, are more likely to enhance their learning experience when there is adequate support in the use of these tools offered by teachers and support staff. Therefore, the large decrease in positive ratings for actual usefulness of support from face to face or online chat with teachers may be a suitable area for future research.

Support from a community of practice was also perceived as quite low in actual usefulness compared to expected usefulness. It is likely that this finding is due to the time period applied to ratings of actual usefulness. By the time Survey 2 was conducted in July, participants had only the first half of the course year to reflect on for a rating of actual usefulness of the support services. Since Wenger, McDermott and Snyder (2002) emphasise that communities of practice take time to develop, an insufficient period of time had passed for students to noticeably benefit from a community of practice approach to learning about eportfolio use. This interpretation is supported in section 5.2 below discussing change in usefulness ratings over time.

Support from friends and family received low ratings in each survey, which suggests that participants for the most part expected to receive sufficient support from the institution or within the course itself. They may have also perceived their friends and family as having insufficient experience or skill with eportfolios. The fact that actual usefulness ratings for this support type were even lower than expected usefulness ratings indicates that participants' relatively low expectations for support from *friends and family* were well-founded.

Predominantly positive findings for all support types indicate that participants were generally optimistic in their expectations on the usefulness of support services. This may be in part a

result of the lack of experience with eportfolios within the group and a corresponding high level of need for support services (see analysis and discussion on research questions 4 to 6); it could be a result of the perceived high quality of support services offered by the institutions involved; it could have been influenced by the use of a voluntary survey sample, as each individual's motives for volunteering may have impacted on their responses (Cohen, et al., 2009), or by the non-symmetrical rating scales used in this study (see section 3.3). In any case, all support types were rated as at least *somewhat useful* by a large majority of participants, indicating that each type of support provided in this case had value and benefited students and that there was not one clearly preferred support type over another.

b. Practical relevance

For educators and institutions the first salient point is that support staffing is an important consideration for budget and time allocation, but that the support person should have an understanding of the pedagogical purposes of eportfolio use in the course in addition to general technical expertise. All aspects of the role of the support person, in this case including *prepared materials, email and face to face or online support*, were deemed most useful both in expectations and actual experience. This finding emphasises the relevance of a designated role for support services. Email and face to face support from designated staff were similarly as important to students as prepared materials, and these support types often required the support person to communicate the pedagogical and professional benefits of eportfolios to students: both in terms of the current course and their professional futures. For example, face to face workshops involved less time working through technical skills for eportfolio use and more time discussing the learning processes involved in eportfolio use and the potential for eportfolio use in the students' professional roles.

Email and face to face support staffing represent ongoing commitments of time and funding, but prepared materials once created can potentially serve their purpose in future course years. The upgrade schedule of the technology tools these materials refer to should be taken into account as a major software upgrade could render the prepared materials obsolete. However, it is often the case that the software producer will commission their own tutorial materials shortly after the release of a major upgrade. Where appropriate, materials prepared by the software producer could be used in place of, or in conjunction with, custom-built resources such as those used in the present study.

This research was conducted at a period of transition for the Myportfolio host website (Kineo, 2011), which stands as an example of both the above points. Tutorial materials available on the Myportfolio website at the beginning of the research year were obsolete, referring to an out-of-date version of the software platform. A major upgrade was scheduled for the software platform at the end of the research year, and Myportfolio staff produced a set of tutorial materials specific to the new platform that could be used in future years of the course.

Generally high ratings for usefulness of all support types also support the view that offering students a range of support types is beneficial (Bolliger & Shepherd, 2010; Lee, et al., 2011). Where students expressed preference for a particular support type, they would in most cases provide ratings just one point lower for all other support types. This shows that students did not select one support type and ignore all others. Rather, students did identify preferences, but nevertheless utilised all types of support, perhaps employing different types for different purposes, for different situations, or at different times. There is potential here for future research that deals specifically with the nature, extent and timing of student use of each support service; study into this area could enable more strategic planning of support services as an integrated system and help to optimise the timing of scheduled support services like workshops and block courses.

5.2 Research Question 2:

Do expectations of usefulness change significantly over time?

- Expected usefulness of support services generally decreased over time from Survey 1 to Survey 2
- Actual usefulness was rated as lower than Survey 1 expectations, yet ratings for expected usefulness in Survey 2 were still higher than those for actual usefulness
- Frequency data for three monitored support types indicates a large usage peak in March and a smaller usage peak in May
- Participants suggested that face to face workshops should be provided at the very beginning of the course, and perhaps repeated in stages throughout the year

a. Interpretation of findings

High ratings for all support types in all data sets (see appendix 8.1: Survey 1, Question 34; appendix 8.2: Survey 2, Questions 13 and 14) suggest that participants had generally optimistic views about the support they would receive. While ratings of expected usefulness in Survey 2 were still high, they were in most cases slightly lower than in Survey 1. The high workload

faced by students, discussed further for research question 6, may have influenced a small decline in positive ratings as students prioritised formal course work higher than the self-directed development of skills for eportfolio use. Another factor influencing this decline could have been the timing of surveys. Survey 2 was conducted at a stage mid-way through the course, where induction activities were months in the past while the portfolio submission date was months in the future.

Also in Survey 2, participants rated the actual usefulness of support services, from February to July, in all cases lower than their Survey 1 expectations. Again, lower than expected actual usage of support services could be the result of the timing of surveys with the period February to July representing less urgency from an end of year portfolio submission deadline. It could also be the result of actual experience falling short of overly optimistic expectations. Interestingly, ratings for expected usefulness in Survey 2 were also much higher than ratings for actual usefulness: Survey 2 expectations were in fact only slightly lower than Survey 1 expectations for most support types. This finding would seem to support the view that factors related to the timing of the surveys may have influenced the difference between expectations and actual experience. The finding contradicts the view that actual experience in some way fell short of previous expectations as in that case students' expectations about the future could be expected to decrease more dramatically.

Together, the three sets of findings for usefulness ratings show that while participants used support services less from February to July than they had expected, they still maintained high expectations for the use of support services from July to November. Qualitative feedback, which focused more on time constraints as the year progressed, suggests that as the year progressed and course workload intensified students were forced to prioritise their work and subsequently assessment goals took a higher priority in the allocation of study time. In this way, although actual usefulness ratings in Survey 2 were lower than pre-course expectations in Survey 1, the external pressure of steadily approaching assessment goals accounts for consistently high ratings for expected usefulness, which were fairly stable over time. However, the fact that expected usefulness ratings did decrease slightly supports the view that external assessment demands can be seen as less motivating than the perception of value in the exercise itself (Hartnett, 2010). In this case, the perceived value of the exercise of developing eportfolio skills was represented by the view that they can enhance and support subject knowledge and future professional practice. This view also decreased over time, though not significantly according to dependent t-tests, and is discussed further for research questions 5 and 6.

The only support type that presented significantly higher ratings for expected usefulness in Survey 2 than in Survey 1 was *support from building a community of practice*. Perspectives on the gradual emergence of a *community of practice* (Wenger, et al., 2009) may be confirmed by this finding if the slight increase, contrasted with decreases for all other support types, indicates the early stages of development of such a community. Although this is an interesting finding, by itself it is not sufficient to support a claim that a community of practice around eportfolio use had started to emerge, nor does it indicate that the pattern of positive change would necessarily continue over longer periods of time, though it does seem to be a valid focus for attention in future research.

Findings also show that *very useful* ratings generally increased over time, in contrast to general decreases in total positive ratings. This may suggest that participants' understanding of the nature of support services developed over time and their deeper understanding caused some participants to strengthen their opinion on the matter and provide a maximum positive rating of *very useful*.

Peaks in frequency of usage data for monitored support materials correspond closely with the provision of face to face support on eportfolio use. The larger peaks of usage throughout March represent the period immediately after students returned home from their first campus block course. A seminar had been conducted during this block course, outlining the concept of portfolio use and introducing the support services that would be available to students on this topic. It is clear from the usage peaks that many students returned home with questions and concerns, and with motivation to learn about eportfolio use. The second usage peak in May corresponds with the end of a series of workshops provided in the students' local regions around the country. Again, participants returned home from workshops with motivation to interact and work online.

Usage peaks in March and May indicate that face to face support had the positive effect of bringing eportfolio use to the foreground and prompting discussion. It could be argued that students were encouraged by the sessions to explore eportfolio skills, and their online activity resulted from this exploration. On the other hand, for logistical reasons the face to face support sessions involved condensing a lot of information and activity into a relatively short space of time; it could therefore be argued that these sessions increased the level of confusion and anxiety felt by students and this resulted in an influx of requests for other forms of support.

Qualitative data seems to support the former position. In survey feedback, a number of participants suggested that face to face support should be increased. Some focused on the need for active learning of eportfolio skills at the beginning of the course, even before core information on course expectations and subject matter are introduced. Some focused on the need for face to face workshops to be repeated in stages throughout the year.

b. Practical relevance

It has been suggested above that declining positive ratings for expected usefulness, and lower ratings for actual usefulness, of support services could be an indication of time constraints and their impact on study practices and the nature of motivation. The externally controlled motivation of an end of year submission deadline (Deci & Ryan, 2008) is not sufficient for the majority of students to maintain active development of eportfolios throughout the year and beyond. A possible test of this interpretation of the results could be applied by comparing the results for this course, or one with a similar assignment submission deadline, with a course that segments the assessment of portfolios to instigate a series of submission deadlines throughout the year. Based on the findings for change over time in this study, the researcher takes the position that a series of portfolio tasks spread throughout the year could increase the rate of use of support services and more importantly may encourage students to maintain a more consistent focus on development of portfolio skills and development of their portfolio itself.

The exclusive increase in total positive ratings for the support type *community of practice* warrants further consideration because if the finding is represented consistently throughout the year, or in other course years, this supports a new direction for technical support services for long term benefit. Cultivating a community of practice on subject knowledge and course content was part of the methodology of the postgraduate programme for this research setting (Mentis, 2010), and it is likely that over time the development of active communities of practice for the wider course had some impact on the potential for a community of practice approach to support on eportfolio development. Based on this finding, support providers may consider approaches that utilise a community of practice approach, such as early identification of technology stewards in the student population and active nurturing of local student communities through group exercises and events (Demaree & Sissi, 2009; Wenger, et al., 2009).

Support service usage peaks in March and May, as well as verbal feedback in emails and surveys, emphasises the importance of face to face workshops. Participants expressed

preference for face to face support modes and workshops: particularly as a first step to learning about eportfolios, but also as repeated events to support ongoing development. Based on the high rate of attendance at optional workshops in May (approximately 95% of the course population); as well as quantitative data that showed consistently high ratings for *face to face workshops with support staff*; and verbal feedback from students calling for more face to face support, the researcher feels that it is important to provide workshops at the earliest possible stage in the course. Furthermore, the possibility of repeat workshops at key stages throughout the year is seen as valid for consideration. Although funding could be an obstacle to repeat workshops that require nationwide travel, future research could explore the potential for synchronous virtual face to face workshops online as a means to enable more frequent workshops throughout the year without the additional cost of travel and accommodation.

In this case, the earliest possible stage in the course for eportfolio workshops would seem to be at an initial block course scheduled at the beginning of the course calendar. In future course years this block course presents an opportunity for early eportfolio workshops on eportfolio skills and concepts. However, the researcher suggests that eportfolio use could be more effectively developed as a formalised course component. A rationale for the introduction of eportfolios as an assessment tool in the programme was that using eportfolios can assist students to develop key skills for professional development and career advancement (Barrett & Garrett, 2009; Clark & Eynon, 2009). With this rationale in mind, the development of an eportfolio can be seen as a relevant course component, rather than an additional and incidental skill. The researcher contends that in addition to support services discussed in this study, eportfolio skills and concepts should comprise an early course component with course credit, either as a unit of work within a compulsory module or as a separate module in its own right.

5.3 Research Question 3:

In what ways is the use of support services impacted by other demographic and background factors?

- A small number of correlations were found for each of the following demographics compared with support service usefulness: age group, ethnicity, qualification level, experience in endorsement area
- No significant relationships were found between gender and support service usefulness
- The collected demographics did not exhibit significant relationships with each other

a. Interpretation of findings

Relationships between age group and usefulness of both *prepared materials* and *community of practice* suggest that these support services may warrant closer attention in courses with younger student populations. A relationship between age group and the use of prepared materials was observed for both actual experienced usefulness and expected usefulness in Survey 2. This indicates that over time, and through the experience of using prepared materials, students in lower age groups became more convinced of the value of this support service compared with students in higher age groups.

Although there were no observed correlations for gender in these tests, the researcher suggests further attention could be paid to this demographic in research samples with more equal gender populations. In this case, the small number of male participants could have reduced the validity of data on gender effects.

Likewise, the course population were predominantly Pākehā. The observed significant correlations for support service usefulness compared with Māori ethnicity may not be truly valid as Māori ethnicity was represented in only 7% of the valid sample, including two participants with multiple ethnicities. Compared with the general course population, Māori participants provided higher ratings of usefulness for *email to a student* and *community of practice*.

In Survey 1, participants with lower qualifications expected *support from email to a student* to be useful, while in Survey 2 they gave more positive ratings for *support from friends and family*. These participants may see added benefit in seeking support from others, particularly if they view their classmates and work colleagues as more qualified or senior.

Experience in endorsement area exhibited only one significant relationship in these tests: with the usefulness of *face to face workshop or online chat with support staff* in Survey 1. Going into the course, participants with a lot of experience in their endorsement area may have expected that expert face to face help would benefit them less than other support types in developing eportfolio skills. Over time their views aligned with the sample population.

b. Practical relevance

The small number of relationships between demographics and ratings of support service usefulness suggests that few practical guidelines can be drawn, particularly as these relationships were for the most part not consistent over time. In a general sense, the data could suggest that the demographics collected in this case should not be seen as defining factors in the design and delivery of support services.

The data does indicate that prepared materials may be more valuable as a support service in courses with lower student ages.

A more representative sample population is required for future research to make valid comparisons on the basis of gender and ethnicity. The findings for this non-representative data set suggest that support staff need not diversify their approach with regards to gender, but that some consideration could be given to support services in relation to student ethnicity. If the findings for relationships between Māori ethnicity and support service usefulness ratings are validated in future research on representative sample populations then support staff can take some direction from this. Māori students may be particularly relevant as potential technology stewards in a community of practice approach or in encouraging other students to see the value of peer support (Glynn & Bevan-Brown, 2007).

For *highest qualification* and *experience in endorsement area*, relationships observed with support service usefulness were not consistent over time so are not seen as reliable guides for effective practice.

5.4 Research Question 4:

Are there significant relationships between experience with digital technologies and attitudes toward portfolio use?

- None of the relationships between experience and attitude ratings were consistently significant in both surveys
- Skill in eportfolio use in Survey 2 correlated with all four attitude ratings
- Ability to support others correlated with all experience and attitude ratings in Survey 1 only

a. Interpretation of findings

Prior experience with social networking tools may have had some effect on participant attitudes early in the course. Social networking tools promote regular use, which could explain the relationship between prior experience in this area and the intention to continue using portfolios in the future. Also in Survey 1, participants with more experience in using *computer documents* as well as those experienced with *social networking tools* rated portfolios as *useful in adult education*. Yet none of these relationships was represented in Survey 2.

Survey 2 data clearly shows a relationship between the development of skill with eportfolio tools and positive attitudes toward the use of portfolios. All four possible correlations represented in this comparison and the effect sizes for two of these relationships were large. Participants who developed skill in eportfolio use saw portfolios as supportive of subject knowledge and intended to continue using portfolios in the future.

Results show that a relationship exists between experience with digital technologies and the ability to support others, but only at the beginning of the course. In Survey 1, the ability to support others was correlated with all four experience ratings. No significant relationships were found in Survey 2 between experience with digital technologies and the expectation that the participant could support others; however, correlations with large effect sizes were found in Survey 2 between having supported others so far and experience with digital technologies. It seems that going into the course, students with more experience with digital technologies felt more confident and capable of helping others to understand a new area of digital technology. Their expectations seem to have been confirmed in practice, but by Survey 2 students with prior experience with digital technologies were no more likely than their classmates to support others. On one hand this finding could be affected by an increase over time in participants who

felt they could help others. In the early stages, those students coming into the course with the confidence and willingness to support others could have drawn this confidence from prior technical experience. Over time, as a larger number of students became confident and willing to support others, the group represented by positive answers to this question became more broadly representative of the sample population.

Similarly for attitude ratings, in Survey 1 all attitude ratings were positively correlated with the ability to support others. Students with a positive attitude toward portfolio use at the beginning of the course also felt that they could support others. Again, this relationship was not observed for Survey 2 expectations. However, there was only one relationship between an attitude rating and actually having supported others: students who provided positive ratings for the view that *portfolios support subject knowledge* were more likely to have supported others. In both surveys the view that *portfolios support subject knowledge* also had a significant relationship with ratings for actual and expected usefulness of a number of support services. These findings are discussed further under research question 5.

b. Practical relevance

In identifying potential technology stewards or supportive peers in the course community the student's attitudes are a key consideration; yet the findings for research question 4 show that the student's prior experience with digital technologies should not be discounted, particularly in the early stages. It seems that while prior experience with digital technologies may play a role in the early establishment of a supportive community, from about mid-way through the study year prior experience becomes less important a factor in the ability to support others compared with maintained positive attitudes.

Attitude questions were framed by the researcher to represent two types of attitudes: *impression attitudes* on the benefits of portfolio use, and *intention attitudes* as to the participant's future actions. *Impression attitudes* in some ways relate to self-directed motivation, specifically *identified regulation* (Deci & Ryan, 2000; Hartnett, 2010) which can be defined as a form of motivation stemming from identification of the inherent value of an activity. These attitudes indicate beliefs that can lead to an individual's self-directed motivation to use portfolios and to develop the skills needed to do so competently. This type of attitude includes the view that *portfolios are useful in adult education* and the view that *portfolios support subject knowledge*. *Intention attitudes* provide a gauge of the degree to which the student feels motivated toward portfolio use. This type of attitude includes the

intention to continue using portfolios in the future and the belief that the participant could *encourage others to use eportfolios in the workplace*.

The researcher contends that participants' views on the extent to which portfolios support subject knowledge should be given particular consideration in future research. This attitude rating is present in a range of relationships with support service usefulness ratings discussed for research question 5 below. For research question 4, the relationship in Survey 2 between the development of *skill in eportfolio use* and the *impression attitude that portfolio use supports subject knowledge* provides insight for support staff. The researcher contends that *impression attitudes* can be directly influenced by support staff and this position is supported in studies that have found changes in beliefs and intentions over time related to training in technology use (S. E. Anderson & Maninger, 2007; Lau & Woods, 2009). If this position is valid the findings for research question 4 suggest that positively influencing student views that *portfolio use supports subject knowledge* could effectively support their motivation toward developing skill in eportfolio use.

5.5 Research Question 5:

Are there significant relationships between a participant's experience and attitudes with eportfolios and digital technologies compared with the types of support services they utilise?

- All significant correlations were positive.
- There were high numbers of significant relationships between attitudes toward portfolio use and support service usefulness, and low numbers of significant relationships between experience with digital technologies and support service usefulness.
- Only one correlation was consistent across all three data sets: the *intention to continue using eportfolios* compared with usefulness of *support from friends and family*.
- Some other relationships were observed consistently in two out of the three data sets, indicating some change in the connection between attitudes and ratings of usefulness.

a. Interpretation of findings

The fact that all significant correlations were positive indicates that participants more experienced with digital technologies (Survey 1: Q29, Survey 2: Q5) or with more positive attitudes toward portfolio use (Survey 1: Q30-33, Survey 2: Q9-12) also rated support services higher (Survey 1: Q34, Survey 2: Q13-14), at least in those cases where a significant relationship was observed. This poses a dilemma, suggesting that some support services may

exclude low experience users or users with less positive attitudes toward portfolio use who arguably most need support (Wray, 2007). Since no negative correlations were observed this means that there were no support services rated as more useful by participants with lower levels of experience with digital technologies. Therefore, while some support services were less useful for participants with low experience, these participants were not compensated with other support services that were more useful for them.

Aside from exhibiting consistent positive correlations, the tables displayed in section 4.3 show that there were only a small number of relationships observed between experience with digital technologies and usefulness of support services. Only one significant relationship was found to occur consistently in two out of the three datasets, and there were no significant relationships observed as occurring consistently in all three datasets for experience with digital technologies versus support service usefulness.

In Survey 1, participants with experience creating and editing web pages had higher expectations to receive support from face to face or online chat with teachers and from friends and family. We might speculate that these students have more advanced digital literacy than others and therefore have a better understanding of how to communicate online with teachers or in what ways family and friends could assist them; they might also belong to a context of friends and family who have these skills and could be considered capable of helping; or they might be members of existing communities of practice for digital skills in their personal or professional life. However, neither of these relationships was observed again in Survey 2 data for expected or actual usefulness of support services.

The relationship observed in two data sets was between *experience with social networking tools* and usefulness of *prepared support materials*. The static and instructional nature of prepared materials does not seem to have a strong connection with social networking tools or the skills involved in using them. Yet perhaps participants experienced with social networking tools generally have a sufficient level and type of digital literacy to locate prepared materials reliably, to understand them and to follow their instructions actively and confidently. Furthermore, they may be more comfortable with allocating time to working through prepared materials if they have experience using a computer for long periods of time to interact via social networking tools.

There were a much higher number of significant relationships found between attitudes toward eportfolio use and support service usefulness ratings. Based on this observation and on the presence of large effect sizes in some of these relationships, the researcher argues that

attitudes are more relevant indicators of support service preferences and practices compared with experience. Especially the relationships with large effect sizes or consistency between data sets could indicate causal relationships: whereby certain positive attitudes cause students to use support services more readily or more confidently.

For relationships that are consistently significant in two out of three datasets, indicating some change in attitudes that were significantly related in two datasets but not in a third, the majority involved *impression attitudes* (see discussion on research question 4 for definition of *impression attitudes* and *intention attitudes*). Conversely, the only relationship that was observed consistently in all three data sets involved an *intention attitude*: participants who intended to *continue using portfolios* also provided high ratings for *support from friends and family*. The fact that this consistent correlation was observed for an *intention attitude* supports the view that *intention attitudes* are not directly influenced by support services, but rather are indicative of the student's self-directed personal choices. It could be interpreted that a student who feels they can rely on support from friends and family, or from communities of practice outside of the course, feels more confident and positive about continuing to use portfolios when other course-based support services are not available. Their expectation in Survey 1 that they would continue using portfolios in the future was confirmed by the same relationship appearing in the actual usefulness data set in Survey 2. As their expectations had been confirmed in this way, participants with high ratings for the intention to continue *using portfolios* maintained their expectation that *support from friends and family* would be useful: leading to the same significant relationship in the expected usefulness data set in Survey 2.

Significant relationships involving other support types and attitudes did not show the same consistency, even in cases where effect sizes were large in one or two data sets. In Survey 1, participants who gave high ratings for *support from face to face or online chat with students* also provided high ratings for all four attitudes. In Survey 2, participants who gave high ratings for the actual usefulness of this support type provided high ratings for two attitudes: they expected to *encourage others to use portfolios*, and they felt that *portfolio use supports subject knowledge*. Yet in ratings for expected usefulness given in Survey 2 there were no significant relationships between *support from face to face or online chat with students* and any of the attitude ratings. It is possible that by this stage in the course, those participants who felt confident to help others outside of the course population no longer felt they could themselves benefit from peer support considerably as they had reached a higher level of skill in eportfolio use compared with their peers. This change may also be related to time constraints as the collaborative and peer-supported aspects of the course, and of portfolio development, began

to give way to final tasks of self-study and assessment preparation shortly after Survey 2. In this sense, the findings could be the result of a shift over time from a workspace focus to a summative showcase focus (Barrett, 2011a) in participants' development of their portfolios.

In Survey 1, participants who rated portfolios as *useful in adult education* also provided high ratings for expected usefulness of *email to support staff*. In actual usefulness ratings in Survey 2, participants who rated portfolios as *useful in adult education* did not give significantly higher ratings than other participants for actual usefulness of email from support staff; yet they maintained high expectations that *email to support staff* would be useful and in fact the effect size of this relationship was larger than in Survey 1. The same pattern is observed for the relationship between the impression that *portfolios support subject knowledge* and usefulness ratings for *support from friends and family*. In each case, the relationship between the attitude and the expectation was consistent even though experiences during the first half of the course did not confirm it. This could show that students who have positive *impression attitudes* on the educational benefits of portfolio use do not require immediate results, but expect to utilise support via email to support staff and from friends and family in the later stages of the course.

Lastly, in the data sets for attitude ratings versus both actual usefulness ratings and expected usefulness ratings in Survey 2, three consistent relationships were found. The *impression attitude* that *portfolios are useful in adult education* was correlated in both cases with usefulness of *email to a teacher*. The *impression attitude* that *portfolios support subject knowledge* was correlated with usefulness of *email to a teacher* and of *prepared materials*. In these cases, the relationship between attitude and actual usefulness ratings could have influenced the relationship between attitude and expected usefulness ratings. Although data on teacher-student interactions was not collected for this study, the researcher contends that the findings for these correlations suggest teachers were receptive to requests for support and that this receptiveness may have impacted not only on expected usefulness ratings for *email to a teacher*, but also on positive ratings for the *impression attitude* that *portfolio use supports subject knowledge*. The high ratings these participants gave for *support from email to a teacher* indicate that their experience of receiving effective support from teachers strengthened their expectation that *email to a teacher* would continue to be useful after Survey 2. The act of devoting teacher time to portfolio matters in this way may have implied to these students that eportfolio matters are worthy of teacher time; this in turn could have strengthened the *impression attitude* that *portfolio use supports subject knowledge*. Likewise, students could have been encouraged as to the relevance of portfolios for supporting subject

knowledge in the process of utilising prepared materials and considering the time and attention that was devoted to creating them.

In the analysis for research question 5 in chapter 4, *participant A* was introduced as representative of the sample population, as their quantitative ratings reflected many of the significant relationships observed for the sample population. *Participant A* started with *no skill or experience* in eportfolio use, but reached mid-year with the confidence to move forward. This participant's skill in other digital technologies was low, and remained so, yet their skill in eportfolio use increased significantly over time. Attitude ratings provided by *participant A* were consistently high. Their qualitative feedback provided insight into some of these statistical relationships, confirming that this participant not only used the support services to develop eportfolio skill but also felt confident enough to support others in doing so by organising peer support workshops. Positive attitudes for this participant were more important than technology experience: in terms of encouraging the use of preferred support services, of markedly developing their competence in eportfolio use, and of enabling the practice of supporting their peers.

b. Practical relevance

The finding that, in the case of experience ratings and attitude ratings, all significant correlations with support service usefulness were positive can be seen by support staff as both a challenge and a directive. As a challenge, it suggests that those students most in need of support (Wray, 2007) are in certain cases and for certain support types most reluctant to utilise it. It also suggests that students with less positive attitudes about portfolio use are less likely to take part in support services that could change their views (Lee, et al., 2011). Yet the directive to be taken from this finding is that successful application of support services has the potential not only to improve experience and attitudes as intended, but also to encourage increased use of support services, potentially establishing a cycle of further increases in targeted skills and positive attitudes. Support staff could consider other types of support that may be more useful for low-experience students. They could also explore ways to encourage low experience users to attempt using support services, perhaps by introducing additional basic digital literacy approaches to scaffold these students toward specialised eportfolio skills. With regards to positive correlations between attitudes and usefulness ratings, support staff could examine the nature of positive and negative attitudes to portfolio use and explore methods for nurturing positive attitudes.

In a practical sense this highlights the importance of the earliest and most basic forms of support. If students feel overwhelmed, ignored, or excluded from support services in the early stages of the course due to low experience or due to ambivalent or negative attitudes then they may feel reluctant to use support services. Whereas, if students feel support services are pitched appropriately and that with the assistance of these services they are personally capable of achieving their goals then they are likely to use the support services and further strengthen these views (S. E. Anderson & Maninger, 2007). The researcher suggests that approaching eportfolio skills at the beginning of the course provides greater opportunity for all students to start this process of scaffolding relevant knowledge toward the achievement of portfolio creation goals. The formalised introduction of support services early in the course may also feed back on improved attitudes: both *impression attitudes* and *intention attitudes*.

Another practical message from these findings is that use of support services and improved eportfolio skill is significantly correlated with participant attitudes more than with prior experience in digital technology use. By focusing support services on positively influencing *impression attitudes*, encouraging students to perceive portfolio use as beneficial to their study and career, support staff can indirectly influence *intention attitudes* and the student's actions including continued use of support services. Differing levels of prior experience with digital technologies can be seen as a factor requiring diversification of approaches to providing support and of the level at which that support is pitched. However, a positive *impression attitude* regarding the educational potential of portfolio use, indicated by high ratings for *the extent to which portfolio use can enhance or support subject knowledge*, is correlated with the use of most support services and is also a factor that support staff can aim to influence directly (S. E. Anderson & Maninger, 2007).

By pitching support services to the appropriate level, staff can ensure that students gain the most benefit from using these services if they decide to use them. Yet by actively influencing positive attitudes to eportfolios through highlighting their usefulness, relevance and meaningfulness, staff can help ensure that students decide to use support services in the first place. Results suggest that if support staff and course staff can influence positive views on the extent to which portfolios support subject knowledge then this may in turn impact positively on other factors such as the culture of peer support, the use of support services, and the individual student's development of eportfolio skills.

5.6 Research Question 6:

Are there significant changes in participant experience and attitudes toward eportfolios over time?

- Skill and experience with eportfolios changed significantly over time, but other rated digital literacy skills did not
- No significant change was observed in the expectation of being able to support others
- Increases were observed over time of qualitative feedback regarding concern over time constraints and the positive potentials of eportfolio use

a. Interpretation of findings

Of the three rated digital literacy skills only eportfolio skills significantly increased; this is a strong indication that support services were effective and were utilised by students in the course. Participants could have gained skill in eportfolio use simply by being exposed to this technology, which was new to the majority of students in the course. However, if support services did not influence this process directly then the other digital literacy skills could be expected to increase as well since each of the rated skills was used by students in course activity. The use of computer documents was an important aspect of the course and most assignments were submitted in digital form. Skills related to social networking tools were also prevalent in the course as students communicated through most of the year via the course website, based on the Moodle LMS (learning management system) which shares many functions with social networking tools. However, significant gains in participant experience were not observed in survey ratings for either *computer documents* or *social networking tools*, while ratings for *skill and experience with eportfolios* rose significantly between Survey 1 and Survey 2.

A decrease in the *impression attitude* that *portfolios enhance subject knowledge*, though not significant, causes concern when considered in light of the importance of this particular attitude and its susceptibility to staff influence. It was argued above that staff can aim to directly influence *impression attitudes*, including the view that portfolios enhance subject knowledge, through the manner of support provided and the placement and priority of eportfolio use in the course. Therefore, if participants felt less positive over time about the potential for portfolios to enhance subject knowledge, possible causes for this change could be found in the way portfolios were used and supported in the course. The researcher suggests that this change could be related to the sense that Barrett's (2011a) two faces approach to eportfolio use was not fully represented in the use of portfolios in this case. The use of

portfolios at this early stage in the development of the specialist teaching programme was predominantly focused on showcase portfolio use, while the workspace aspects of portfolio use were integrated in the course design, but not specifically associated with portfolio use.

The showcase aspects of portfolio use (Barrett, 2011a) focus on the end product, which is a demonstration of the producer's learning, allowing markers to summatively assess the student's achievement of course goals. However, the process of developing knowledge is more clearly characterised in the workspace aspects of portfolio use: including reflection on one's own learning as well as collaboration to share the learning journey with peers. The view that portfolios enhance subject knowledge is not directly supported by the showcase aspects of eportfolio use as these are focused on demonstrating knowledge, not on developing it.

Participants in the course aimed to produce a showcase portfolio as an assessment document for grading, and were given the option of using digital or non-digital methods for presenting this showcase. The implication in that choice is that the technology involved in producing the eportfolio enabled the presentation of summative assessment materials but was incidental to the learning process these materials would represent. MyPortfolio was thus seen by some participants as a showcase tool or "IT [information technology] vehicle" and not a workspace tool or an approach to learning.

The researcher expects that even with a small decrease in participants' views that portfolios can enhance subject knowledge, the learning benefits of a workspace portfolio were not denied from these students. Reflection on their learning journey and professional practice (Schön, 1991) still formed an integral part of student work throughout the course and was essential to completion of the portfolio assignment (Zubizarreta, 2004a). However, given the choice to present (showcase) their work in hard copy, soft copy, or online, some students perceived their process of reflection as being separate from the summative portfolio product. Their workspace was separate from the final showcase, since the choice of portfolio format was a decision on showcase method only. Moreover, the benefits of collaboration and social learning were central to the course methodology (Lave & Wenger, 2009), with active student-centred forums at the core of all learning processes and group work comprising some of the graded course activity. These collaborative aspects of the course were not explicitly connected to the process of developing a portfolio, so the collaboration and communication that took place was by some participants not seen as a component of portfolio development. The social affordances of the MyPortfolio host were not prioritised as in many ways these were made redundant by similar capabilities within the course website LMS (learning management system); so even in terms of the use of technology the student's portfolio was perceived as

separate from the course work and activity that could otherwise be fully integrated with that portfolio.

Participants who expected in Survey 1 that they could help their peers did actually help their peers and maintained the expectation in Survey 2 that they could continue to do so. Equally, those who felt they could not help their peers did not help them and maintained the expectation that they could not help their peers after Survey 2. This finding indicates that data on student expectations on this topic is a reliable indicator of their actual practice throughout the course, which provides a valuable guideline for support staff to be discussed under the heading *practical relevance* below.

There was an increase observed in qualitative feedback involving positive statements on the educational potential of portfolio use. Although this did not correspond with increased positive ratings for *impression attitudes* on portfolio use, the qualitative feedback confirms that staff can aim to positively influence these attitudes. There was also an increase in concern about time constraints in qualitative feedback between Survey 1 and Survey 2. Increased concern about time constraints could be a result of the gradual accumulation of pressure over time in a post graduate course as the dates for final assignment submission draw nearer. Since these comments were expressed as concerns about portfolio use the researcher suggests that the result also relates to a lack of designated time for the development of skills for eportfolio development. If time constraints become a general concern in the course then they could be seen as a stronger concern for the portfolio component if this component is not prioritised in formal allocation of time as an element of course content.

b. Practical relevance

For course providers and administrators, the increase in eportfolio skill confirms the importance of support services, particularly as in most cases the participant's skill level rose from *none* to *basic* or *competent*. Findings may also confirm the relevance of offering a diverse range of support services as the increase in eportfolio skill occurred alongside consistently high ratings for all support types: particularly staffed support types.

A small decrease in positive views that portfolios enhance subject knowledge was interpreted as resulting from the sense that the workspace process (Barrett, 2011a) was seen by some as existing separately from portfolio development. The researcher argues that relevant workspace actions of reflection and collaboration were still present in the course if not clearly connected with portfolio development tasks. For this reason, in a practical sense it is only important to monitor and repair this attitude in future courses if it is also seen as important to

align workspace and showcase aspects and to define these clearly as portfolio elements. The researcher contends that it is important to align workspace and showcase aspects, but that this goal requires careful consideration of the relevance of portfolio skills and usage to programme objectives and to the future career development of its students (Barrett, 2011b; Ellaway, 2007; Miller & Morgaine, 2009).

To effectively align the workspace process and showcase product under the banner of portfolio development would require a restructuring and reprioritising of course components. Students involved in reflection and collaboration who see these tasks as only loosely connected to portfolio development, via the presentation of artefacts in the portfolio showcase, may accept that valuable course time cannot be devoted to the development of portfolio skills. Course content in this sense is defined exclusively as knowledge and skills related to their specialist teaching subject area and eportfolio skills do not meet this criteria. From this perspective, reflection and collaboration are methods applied in the structure of the course: they are not skills that students are intended to learn alongside subject knowledge, and they are not components of the development of a portfolio. Yet if students are encouraged to see reflection and collaboration both as skills integral to an education course and as processes involved directly in the development of their portfolio (Herner-Patnode & Hea-Jin, 2009; Yancey, 2009b; Zubizarreta, 2009) then the portfolio becomes more than a tool for presentation: in some ways it can be seen as the unifying context for activity in the course as a whole. The showcase aspect of the portfolio is then just one face of this context, its purpose to exhibit the authentic learning that has taken place throughout the year; whereas the workspace for development of portfolios is treated as the context for learning that course activity takes place within. From this perspective, devoting course time and grading to the development of portfolio skills could be seen as essential and equally as relevant as other course content both for the successful completion of learning objectives in the programme as well as for the development of lifelong skills to support the student's career.

Feedback from one participant in Survey 2 (Q17) provides a clear example of how the definition of the portfolio as a showcase limits its relevance and prevents it from drawing time away from course content: "it is very time consuming learning course content and an IT vehicle to present this new information". For some students in the course the portfolio was seen as an IT vehicle for presentation only; time spent learning how to operate this vehicle was time taken away from the study of course content. To some extent, with a portfolio limited to showcase goals, this time was wasted as most students had access to and experience with other vehicles, such as pen and paper or text editing software, which could serve the same

perceived purpose. In contrast, if students define portfolios as supporting other valuable course activities, including personal reflection and collaboration with peers, then the skills involved in enabling these activities are valued as integral to the course. Support staff can attempt to define portfolios as having workspace and showcase faces (Barrett, 2011a), but ultimately acceptance of this definition among students relies on course providers to prioritise portfolio skills as a formal course component with time devoted throughout the year to activities that scaffold toward competence in eportfolio use as a valuable academic and professional skill set (Banks, 2004; Challis, 2005; Seldin & Miller, 2009).

Participants' expectations in Survey 1 as to whether they could support their peers were consistent with their actual experience of helping their peers as rated in Survey 2. This finding is valuable for support staff as it suggests that data on this student attitude could be reliably utilised to direct some relevant support services. For example, students who identify themselves at the outset of a course as expecting to be able to support others could be identified by support staff as potential technology stewards in a community of practice approach (Wenger, et al., 2009). In many cases, the student's expectation that they could support others may be related to a higher level of technical skill, but this is not a necessary relationship in all cases. Regardless of the student's initial level of technical skill, if they have expressed the expectation that they could support others in eportfolio skill development then results show they are very likely to do so. The researcher suggests that in addition to identifying a set of students with positive responses to this question in a pre-test, support staff could specify a subset within this group of students with positive attitudes toward portfolio skills. This narrow subset of students with positive attitudes to portfolio use as well as the expectation of being able to support others represents very high potential as technology stewards because, as discussed for research question 5, positive attitudes toward portfolio use are significantly correlated with use of support services and an increase in eportfolio skill over time. The students in this subset then are very likely to support others, very likely to improve their own level of skill in eportfolio use to better enable that support, and very likely to benefit from support services and therefore encourage others to use these services effectively.

With reference to the increase over time of concerns about time constraints, the researcher suggests that this indicates a more serious problem in courses where portfolios are viewed as predominantly showcase vehicles. The final submission date for the showcase dimension of a portfolio will in most cases be placed at the end of the course to ensure this end product contains a comprehensive summary of the student's work throughout the year. If the workspace elements of the eportfolio have not been properly developed with formal learning

of eportfolio skills through time spent on eportfolio tasks then this could place many students in a difficult position towards the end of the year. Students with a showcase-only perspective may leave the production of this showcase to the latter part of the course, especially if the course has involved no graded or ungraded activities that focus on eportfolio skills earlier in the year. They may not have developed eportfolio skills in the process of workspace use throughout the year, so they will face the need to learn these skills while the submission deadline is drawing near and other course components are increasing pressure. Alternatively, in a course with scaffolded eportfolio activities throughout the year, which emphasise the workspace face of eportfolio use, students will have gradually developed many of the requisite skills for producing the showcase portfolio by year end. This accumulation of skill through periodic completion of the portfolio could potentially alleviate some pressure and ensure that essential eportfolio skills are not ignored as time becomes constrained in the later months. Barrett's (2011a) three stages of portfolio development and portfolio skills development, outlined in chapter 2 can provide a framework for an ongoing strategy of eportfolio work throughout a course of study. The researcher's three stages presented in support materials in this case (Simpson, 2011): *store*, *present* and *access* can provide an equivalent framework where eportfolios are based on Mahara (2010) or a similar eportfolio software system.

6 Conclusion and Recommendations

The findings discussed in chapter 5 of this report can be summarised in a set of practical recommendations for support service development and facilitation. These recommendations are supported in the literature reviewed for this study as well as in the mixed analysis of quantitative and qualitative findings. A summary of the key outcomes of the study is presented below, followed by further explanation on each outcome and the relevant recommendations for educators and institutions. The researcher intends that this summary of outcomes and recommendations can be used to inform strategies for providing support services on eportfolio use in contexts similar to the research setting.

The conclusion chapter then closes with a section on the limitations of this study and recommendations for future study.

6.1 Key Outcomes

Recommendations for educators and institutions on providing effective support services for eportfolio use by student-practitioners in a postgraduate specialist teaching course.

A set of key outcomes were identified from this study's exploration of the views of students in a post-graduate specialist teaching programme as to the usefulness of a range of support services for eportfolio use.

1. Provide designated support staff and a diverse range of support services
2. Based on Barrett's two faces approach to eportfolio use (2011a), ensure that students benefit from the workspace face of eportfolio use as a learning process
3. Place high priority on face to face support services in course scheduling, particularly early on and ensuring in these sessions that support services accommodate diverse ability levels effectively
4. Establish eportfolio skills development as a formal course component worth course credit
5. Survey students' development of skill in eportfolio use and attitudes toward eportfolios at key stages and use this data to cultivate effective learning strategies
6. For long term course planning, consider integrating eportfolio use into communities of practice within the course and utilising certain students as technology stewards based on their surveyed attitudes and observed performance

Key Outcome 1: Diversity of support services and designated staffing

Findings confirm the view, represented in literature reviewed in chapter 2, that a range of support services should be provided using diverse approaches (Bolliger & Shepherd, 2010; Lee, et al., 2011; Wray, 2007). In this study, all support services were utilised and highly valued by students. The highest rated support services were those services facilitated by a designated support staff person who applied technical knowledge as well as pedagogical and contextual knowledge to align support services with the programme aims and methodology.

Recommendation

The researcher recommends that course providers ensure diversity in support service approaches. This could include, as in this case: email support, peer support forums, prepared materials in print and online multimedia formats, and face to face workshops. Other possible approaches could include active learning tasks and student-directed collaborative tasks. The criteria for selection of support staff should include consideration of educational backgrounds over and above technical backgrounds, enabling prepared materials and ongoing support to be provided in ways relevant and appropriate to course pedagogy and methods.

Key Outcome 2: Importance of the workspace process for eportfolio use

Literature on eportfolios strongly emphasises their potential to support reflective practice, formative feedback and peer support (see for example Barrett & Garrett, 2009; Gray, 2008; Yancey, 2009b). These affordances are all more strongly represented in the workspace process of eportfolio use than in its showcase product. Findings in this study indicate that showcase requirements for eportfolio use may have taken precedence over workspace processes; the attitude that portfolio use can support and enhance subject knowledge decreased. This attitude, mentioned in key finding 5, is highly influential in continued use of support services and effective development of skill in eportfolio use.

Recommendation

Course providers can ensure that eportfolios are utilised as both workspace and showcase tools (Barrett, 2011a). The extent of time and effort required by students to develop sufficient skill for effective eportfolio use is not justifiable for the purposes of showcase assessment alone. A showcase product for assessment can be produced through various methods based on the student's existing skills and tool use, so the digital literacy learning process required for effective presentation of even a showcase portfolio would be in this sense additional and incidental to course aims. In contrast, the benefits of workspace processes involved in ongoing eportfolio use warrant the allocation of time and effort as these processes can enrich learning

and enhance the student's academic and professional skill set (Seldin & Miller, 2009), and they can support the development of subject knowledge throughout the course (Peacock, et al., 2010; Yancey, 2009b).

Key Outcome 3: Scheduling, skill levels, and priority of face to face support

Quantitative and qualitative results highlight the importance of face to face support on eportfolio skills. Participants commented frequently on the need for this method of support and qualitative data showed that usage of other support services peaked in the period immediately after each face to face support session. However, the wide disparity between students' digital literacy levels resulted in face to face support sessions being limited to basic skills and concepts. Some participants indicated that face to face support at the earliest opportunity would benefit them most, followed by repeat sessions throughout the programme of study.

Recommendation

Face to face support, including block course seminars, on-location workshops, and online meetings, can be given high priority in course scheduling and budget allocation. The first face to face support session, introducing students to eportfolio concepts and the necessary digital literacy skills, could take place at the earliest opportunity. In courses where digital literacy skills are not a course pre-requisite it is likely that the student population will represent a wide range of digital literacy skill levels: as was the case in this research. With varying digital literacy levels in mind, support staff can attempt to diversify not only the types of support services as suggested for key finding 1, but also the level and type of skills supported (Lee, et al., 2011; Wray, 2007). A number of approaches could be taken to achieving levelled development of skills and the appropriate approach would depend on other factors such as whether eportfolio skills are treated as a formal course component as suggested in key outcome 4. Course providers and support staff could consider for example: streaming students into groups based on a pre-course digital literacy test or survey and conducting activities on eportfolio skill development appropriate to the level of each group; providing different levels of support, clearly distinguished, especially in prepared materials so that students can self-select the level of support appropriate to them as needed; separating basic digital literacy skills from the development of eportfolio skills and coaching small groups of low-ability students in pre-requisite digital literacy skills prior to eportfolio workshops for all students.

Key Outcome 4: Formalising of eportfolio skills development as a graded component

The development of skill required for eportfolio use can be considerable, particularly for students beginning with a lack of general digital literacy. Without an ongoing focus on graded formative activity on the development of eportfolio skills, many students are unlikely to allocate sufficient time to developing these skills. Qualitative feedback shows that with grading of portfolio work limited to the final submission of a showcase portfolio, and time constraints forcing students to prioritise time spent on course work, students are likely to ignore or undervalue the workspace processes that theorists (Barrett, 2011a; Seldin & Miller, 2009; Shulman, 1998; Zubizarreta, 2004b) argue are the key benefits of portfolio use.

Recommendation

If the digital literacy skills and pedagogical knowledge necessary for eportfolio use are seen by course providers as incidental then eportfolio assessment tasks may be an unnecessary addition to course design; in this case the eportfolio tool is merely a potential alternative format for presentation of the final assignment. If on the other hand eportfolio skills are seen as relevant and useful for 21st century practicing teachers and specialist teachers then these skills should be integrated as graded course components. The researcher supports the view that eportfolios can add value to educational practice (Goldsmith, 2007; Gray, 2008) and that they can save time and labour as a long-term approach to reflection, collaboration and presentation of learning processes for teachers and students (Clark & Eynon, 2009; Seldin & Miller, 2009). Based on findings in this study, particularly the time constraints that caused many students to ignore eportfolio development throughout the year and to lack important skills, the researcher recommends that in courses where eportfolios are intended as a method for learning and assessment, eportfolio skills should be presented as a formal, grade course component.

The method of formalising these skills warrants further exploration and study. Some options may include a course module taught concurrently with subject content course modules, an integrated component or unit of each course module, an intensive course or series of short courses for additional credit, or an online course using instructional design methods where grading is based on the completion of tasks that scaffold the use of essential eportfolio skills. In each case, a diverse range of support services could add consistency to eportfolio use in the course, but student development of eportfolio skills would be approached systematically with formative assessment throughout the year. Ideally, by grading of the effective development of eportfolio skills students would be encouraged to use these skills to support and enhance subject knowledge in other course areas. Crediting eportfolio skills as a course component in

this way may create a feedback cycle: as this study has shown significant relationships between the attitude that portfolios support and enhance subject knowledge, the development of eportfolio skills, willingness to support others, and the use of support services including peer support.

Key Outcome 5: Attitudes are more meaningful as a planning tool than experience

Findings show that compared with digital technology experience, attitude is a more meaningful indication of support service use and of the potential for developing skill in eportfolio use. Furthermore, a participant's pre-course view as to whether they feel capable and willing to support others is a reliable indicator of whether they will in fact support others, regardless of their digital literacy skills. Support staff and course design can influence students' impressions on the extent to which portfolios can support subject knowledge (S. E. Anderson & Maninger, 2007; Lau & Woods, 2009) and this impression is directly related to usage of a range of support services. The student's impression on the extent to which portfolios can support subject knowledge is also related to their capability and willingness to help others.

Recommendation

The development of an eportfolio course module could benefit from maintaining its focus on the potential for eportfolios to support and enhance the development of subject knowledge. Beginning the module with some explanation and justification of this view may encourage students to be more motivated in their approach to course materials and more likely to use the provided support materials. They will be more likely to improve their level of skill in eportfolio use and more likely to share that knowledge by supporting others in their learning.

Key Outcome 6: Community of practice approaches

Community of practice approaches were the only support service type that exhibited increased total positive ratings over time. This may indicate the beginning stages of development of a community of practice on eportfolio use.

Recommendation

Course providers can explore the potential for community of practice approaches and whether this finding is confirmed in more long-term data. For programmes that incorporate community of practice methods in their course design the researcher suggests examining the potential for integrating portfolio development goals within the practice of these course communities. A pre-course survey focusing more on attitudes than skills would be a reliable gauge for teachers to use in planning collaborative activity and organising their own strategies to cultivate a community of practice approach. If a community of practice approach is taken to eportfolio

skills then survey results could help identify potential technology stewards in that community (Wenger, et al., 2009). Based on the results of this study, reliable technology stewards could be those students who feel they can help others, who have positive attitudes toward portfolio use in terms of both *impression attitudes* and *intention attitudes*, and some prior experience with social networking tools.

6.2 Limitations of this study and recommendations for further study

The chief limitation for this study was the fact that time constraints for thesis submission conflicted with the course schedule of the research setting. Due to these time constraints the study could not encompass a full course year for the participants involved. Data was collected from a pre-course survey and a mid-course survey, but not a post-course survey; therefore a range of valuable post-course data could not be utilised. For example, data on student grades for the summative portfolio assessment task was not available so analysis could not be made of the relationship between use of support services, portfolio attitudes, digital literacy experience and performance in the course. This limitation suggests an area for further study where circumstances permit.

Some of the survey participants left a number of answer fields blank, both for rating scale questions and feedback fields. This meant that, as indicated with sample size values displayed for each result, sample sizes often changed from question to question. The sample size for dependent t-tests was often much lower than for correlation tests as a number of participants did not provide sufficient data to allow their Survey 1 and Survey 2 responses to be matched reliably. Fortunately, the impact of these issues was minimised by a large sample population, resulting in acceptable sample sizes even in the smallest cases.

Ratings and feedback from teachers in the course was excluded and this data could have provided a range of additional insight. Further study could focus on data from teachers in a similar programme and compare these to student responses, or develop an understanding of the relationship between teacher experience and attitudes compared with student experience, attitudes, support service use and eportfolio use.

Further study could also compare the manner, extent, and timing of usage for each support service through surveys, interviews and/or focus groups. This could provide a better understanding of effective ways to schedule and facilitate each support service.

Lastly, data on the development of a community of practice over time could be examined more closely and over longer periods of time. The development of communities of practice in

the course community could be approached as an ethnographic study with the researcher comparing the practices of various communities within the course population or forming a detailed description of the practices and culture in the whole course population with regards to the development of digital literacy skills and the use of eportfolios and eportfolio support services.

6.3 Final Remarks

This study has explored the views of students in a post-graduate specialist teaching programme as to the usefulness of a range of support services for eportfolio use. The key findings resulting from the study can provide insight for educators and support service providers who wish to encourage tertiary students to use eportfolios and who aim to support these students in using eportfolios effectively. Barrett (Barrett, 2011a) argues that the two faces of eportfolios, their workspace process of reflective and collaborative learning as well as their showcase product for presentation and assessment, need to be balanced for students to enjoy the full benefit of this technology for learning. The researcher supports this view and offers that to achieve such a balance in graded courses, formative assessment can be applied to the development of eportfolio skills and not solely to the presentation of the eportfolio as a showcase of content. Acknowledgement of eportfolio skills as a course component may not only encourage students to place higher priority on the time spent developing these skills, it could also give credence to the view that eportfolio use can support and enhance subject knowledge throughout the course. The results of this study suggest that nurturing this view could have wide ranging effects on students' use of support services, their development of eportfolio skills, and their willingness to help others in developing eportfolio skills. These outcomes are all the more valuable if the view itself is indeed correct and, as the review of literature for this study suggests, eportfolio use can support and enhance the development of subject knowledge in tertiary education. Educators and support providers who highlight this view as a background for support services could impact positively on all areas of the course as students apply their development of skill in eportfolio use to the learning process for other subjects through reflection, collaboration and formative assessment for learning.

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8 Appendices

8.1 February pre-course survey questions (Survey 1)

Pre-Course Student Survey 2011

Information

[REDACTED]

PRE-COURSE STUDENT SURVEY 2011

[REDACTED] have been contracted by [REDACTED] to develop, implement and deliver a postgraduate qualification in Specialist Teaching. Research will run alongside this activity to gather data on the success of the qualification and issues that arise with its design, implementation and delivery. Data collected as part of the teaching and learning activity of the [REDACTED] will be used to evaluate its effectiveness and success, and to identify areas where improvements can be made.

You have been sent this survey because you have agreed to participate in this research.

Confidentiality
You will be asked to provide your name on this survey. This is so that your responses can be linked to your learning and assessment activity throughout the course, and to your responses to the survey at the end of the year.

All of the research data will be collected and securely stored by the lead researcher, who has no teaching or assessment involvement in the [REDACTED]. The identity of participants will be known only to the lead researcher, and not to any of the academic staff involved in teaching those students. All identifying information will be removed from any data before it is made available to academic staff for research and writing purposes.

Completing this survey
This survey should take about 20-25 minutes to complete. You may decline to answer any particular question simply by leaving it blank.

If you wish to navigate back and forth through your responses, please use the "Prev" and "Next" buttons provided within the survey. The survey is completed by clicking the "Done" button at the end. You won't be able to re-enter the survey once you have exited it, so please make sure you finish all your answers in one session. If you'd like to leave the survey at any time, just close your browser window.

Queries
If you have any queries about this research, please contact the lead researcher, [REDACTED].

THANK YOU FOR TAKING THE TIME TO RESPOND TO THIS SURVEY

This project has been reviewed and approved by the [REDACTED] Ethics Committee: [REDACTED]. If you have any concerns about the conduct of this research, please contact [REDACTED] Ethics Committee: [REDACTED].

Pre-Course Student Survey 2011

About You

1. Your name:

2. Your age:

- 25 years or under 36-40 years 51-55 years
 26-30 years 41-45 years 56-60 years
 31-35 years 46-50 years Over 60 years

3. Your gender:

- Female
 Male

4. Your ethnicity (please tick as many as apply):

- Pākehā/New Zealander of European origin
 Māori
 Pacific Nation (please specify below)
 Asian (please specify below)
 Other European (please specify below)
 Other (please specify below)

Please specify ethnicity here:

5. Your endorsement area:

- Autism Spectrum Disorder
 Blind and Vision Impairment
 Deaf and Hearing Impairment
 Early Intervention
 Gifted and Talented
 Learning and Behaviour

Pre-Course Student Survey 2011

6. Are you working now, or have you ever worked, in a job that is related to your endorsement area?

- Yes
 No

If yes, what is/was your job?

7. In which region do/did you work?

8. Do you have any personal experience that is related to your endorsement area (e.g. your child, a relation)?

- Yes
 No

If yes, please briefly describe this personal experience

9. Overall, how much experience (professional and/or personal) do you have in the area of the endorsement in which you are enrolled?

- | | |
|---------------------------------------|--|
| <input type="radio"/> None | <input type="radio"/> 15-19 years |
| <input type="radio"/> 4 years or less | <input type="radio"/> 20-24 years |
| <input type="radio"/> 5-9 years | <input type="radio"/> 25 years or more |
| <input type="radio"/> 10-14 years | |

10. What is your highest qualification?

- | | |
|---|--|
| <input type="radio"/> No formal qualification | <input type="radio"/> Postgraduate diploma |
| <input type="radio"/> Diploma | <input type="radio"/> Masters degree |
| <input type="radio"/> Bachelor degree | <input type="radio"/> Doctorate |
| <input type="radio"/> Degree with Honours | |

Please name the qualification and majoring subject:

11. How did you find out about the [redacted]

12. Why did you choose to study the [redacted]

Pre-Course Student Survey 2011

Electronic Portfolios

28. What type of portfolio do you anticipate using in the course?

- Electronic portfolio
- Word document portfolio
- Hard copy portfolio
- I'm not sure yet
- Other (please specify)

29. Please rate your general level of skill and experience in the following:

	Advanced skill and experience	Competent/ Proficient skill and experience	Basic skill and experience	No skill and experience
a. Creating and editing computer documents (Word doc, PDF, text files, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Creating and editing web pages (whether from scratch or using a template builder)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Interacting with social networking tools (Facebook, myspace, Bebo, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Creating and editing an eportfolio (MyPortfolio, pebbledpad, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

30. Please indicate how useful, in your view, a portfolio/eportfolio can be in adult education/professional development

- Very useful Useful Somewhat useful Not useful Don't know

31. How likely are you to continue to use a portfolio/eportfolio personally after this course?

- Very likely Likely Somewhat likely Not likely Don't know

32. How likely are you to encourage others in your workplace to use a portfolio/eportfolio?

- Very likely Likely Somewhat likely Not likely Don't know

33. To what extent do you expect your use of portfolio/eportfolio skills to enhance and support subject knowledge throughout the course?

- To a very great extent To a great extent To some extent Not at all Don't know

Pre-Course Student Survey 2011

34. How useful do you think the following support systems will be in helping you to learn about and use portfolios/eportfolios in this course?

	Very useful	Useful	Somewhat useful	Not useful	Don't know
a. Prepared materials (tutorial documents, tutorial videos, example portfolios)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Email to support staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Email to a student	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Email to a teacher	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Prepared activity-based learning: self or peer designed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Face-to-face or online chat with teacher	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Face-to-face workshop or online chat with support staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Face-to-face workshop or online chat with students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Activity-based learning: designed by support staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Building a community of practice around portfolios (sharing and discussing each others' portfolios)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
k. Friends and family	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
l. Other support type (please specify below)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other support type:

35. Do you think you personally will be able to support others (students and teachers) in using portfolios/eportfolios in this course?

Yes
 No
 Don't know

If yes, how would you help others?

36. What initial expectations and/or concerns do you have about using portfolios/eportfolios?

8.2 July mid-course survey questions (Survey 2)

Eportfolio Survey - July 2011

Information

EPORFOLIO SURVEY - JULY 2011

The aim of this questionnaire is to get a better understanding of which portfolio and eportfolio support services you prefer to use and which of these will be valuable for you towards assignment 3. The data will be used to guide support services this year and it will be incorporated into Mark Simpson's research project, which may impact on support services next year.

This survey should take about 10-15 minutes to complete. You may decline to answer any particular question simply by leaving it blank. Your responses will remain completely confidential.

If you have any queries about this research, please contact Mark Simpson [redacted] or the lead researcher for the [redacted].

THANK YOU FOR TAKING THE TIME TO RESPOND TO THIS SURVEY

This project has been reviewed and approved by the [redacted] Ethics Committee. [redacted] if you have any concerns about the conduct of this research, please contact [redacted] Ethics Committee [redacted].

About You

1. Your name:
[redacted]

2. Are you working now, or have you ever worked, in a job that is related to your endorsement area?

Yes
 No

If yes, what is/was your job?
[redacted]

3. In which region do/did you work?
[redacted]

Electronic Portfolios

4. What type of portfolio are you using (or do you anticipate using) in the course?

Electronic portfolio
 Word document portfolio
 Hard copy portfolio
 I'm not sure yet
 Other (please specify)
[redacted]

Page 1

5. Please rate your general level of skill and experience in the following:

	Advanced skill and experience	Competent/ Proficient skill and experience	Basic skill and experience	No skill and experience
a. Creating and editing computer documents (Word doc, PDF, text files, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Creating and editing web pages (whether from scratch or using a template builder)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Interacting with social networking tools (Facebook, myspace, Bebo, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Creating and editing an eportfolio (MyPortfolio, pebblepad, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. Did you attend an eportfolio workshop (local workshop) during May (or the workshop in March)?

Yes No Don't know

7. To what extent did the workshop impact on your skill level in eportfolio use?

To a very great extent To a great extent To some extent Not at all Don't know N/A - Did not attend

Please explain

8. To what extent did the workshop impact on your attitudes toward eportfolio use?

To a very great extent To a great extent To some extent Not at all Don't know N/A - Did not attend

Please explain

9. Please indicate how useful, in your view, a portfolio/eportfolio can be in adult education/professional development

Very useful Useful Somewhat useful Not useful Don't know

10. How likely are you to continue to use a portfolio/eportfolio personally after this course?

Very likely Likely Somewhat likely Not likely Don't know

Eportfolio Survey - July 2011

11. How likely are you to encourage others in your workplace to use a portfolio/eportfolio?

- Very likely
 Likely
 Somewhat likely
 Not likely
 Don't know

12. To what extent do you expect your use of portfolio/eportfolio skills to enhance and support subject knowledge throughout the course (Feb-Nov)?

- To a very great extent
 To a great extent
 To some extent
 Not at all
 Don't know

13. How useful have the following support systems been so far this year in helping you to learn about and use portfolios/eportfolios in this course?

	Very useful	Useful	Somewhat useful	Not useful	Don't know
a. Prepared materials (tutorial documents, tutorial videos, example portfolios)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Email to support staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Email to a student	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Email to a teacher	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Face-to-face or online chat with teacher	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Face-to-face workshop or online chat with support staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Face-to-face workshop or online chat with students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Building a community of practice around portfolios (sharing and discussing each others' portfolios)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Friends and family	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Other support type (please specify below)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other support type:

Eportfolio Survey - July 2011

14. How useful do you think the following support systems will be during the remainder of the study year in helping you to learn about and use portfolios/eportfolios in this course?

	Very useful	Useful	Somewhat useful	Not useful	Don't know
a. Prepared materials (tutorial documents, tutorial videos, example portfolios)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. Email to support staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. Email to a student	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Email to a teacher	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Face-to-face or online chat with teacher	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Face-to-face workshop or online chat with support staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Face-to-face workshop or online chat with students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Building a community of practice around portfolios (sharing and discussing each others' portfolios)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
i. Friends and family	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
j. Other support type (please specify below)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other support type:

15. Since the beginning of the course, have you supported students and teachers in any way in using portfolios/eportfolios in this course?

Yes No Don't know

Please explain

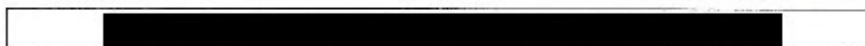
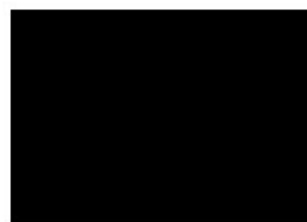
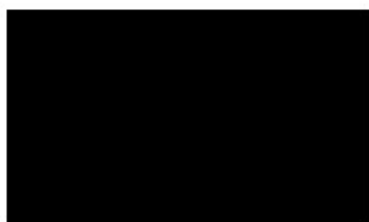
16. Do you think that you personally will be able to support students and teachers in using portfolios/eportfolios during the remainder of the study year?

Yes No Don't know

Please explain

17. What expectations and/or concerns do you have now about using portfolios/eportfolios?

8.3 Information for students about research on the course



INFORMATION SHEET

FOR POSTGRADUATE STUDENTS

Dear Student,

My name is [REDACTED] and I am a Research Officer at [REDACTED]. I am the lead researcher for the implementation of the new Specialist Teaching qualification that you are enrolled in.

Project description

[REDACTED] have been contracted by [REDACTED] to develop, implement and deliver a postgraduate qualification in Specialist Teaching. Research will run alongside this activity to gather data on the success of the qualification and issues that arise with its design, implementation and delivery. Data collected as part of the teaching and learning activity of the Specialist Teaching qualification will be used to evaluate its effectiveness and success, and to identify areas where improvements can be made.

Invitation to participate

All of the students enrolled in the [REDACTED] are invited to take part in the research component of the specialist teaching qualification. You can indicate your willingness to participate in some or all of the research by completing and returning the accompanying Consent Form.

Project procedures

Your involvement would include:

- The completion of an online survey about your expectations of the Specialist Teaching qualification, at the beginning of the year,
- The completion of an online survey about your engagement in and satisfaction with the Specialist Teaching qualification, at the end of the year,
- Giving your permission for the lead researcher to collect information relating to your learning and assessment activity, including material posted by you on the Specialist Teaching online learning site, as well as usage and performance statistics from this site. This information would not be collected until after the end of the 2011 academic year, after you have finished your coursework.

Your participation would require you to spend up to half an hour at the beginning and end of the academic year to complete the online surveys. Apart from this, the research will take no time in addition to your usual coursework.

The online surveys will be hosted by [REDACTED]. Individual emails of invitation will be sent to each participating student by the lead researcher, for both the pre-course survey and the post-course survey. The emails will contain a web link that can be followed to fill out the online survey. For this reason, you are asked to provide a current email address on the Consent Form.

Data management

All of the research data will be collected and securely stored by the lead researcher, who has no teaching or assessment involvement in the specialist teaching qualification. The identity of participants will be known only to the lead researcher, but not to any of the academic staff involved in teaching those students. All identifying information will be removed from any data before it is made available to academic staff for research and writing purposes.

Students who choose not to have their learning and assessment activity used as part of the research will not be disadvantaged in any way. Academic staff will not be aware of who has or has not agreed to participate. A subset of data from participants (excluding those who have chosen not to participate) will be prepared by the lead researcher, which will then be made available to academic staff for research and writing purposes after the academic year.

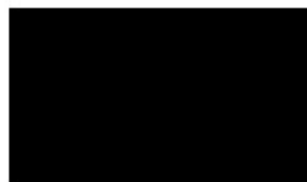
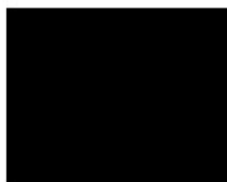
A summary of research findings will be provided to the students involved in the Specialist Teaching qualification through the community of practice online site. The research data will be disseminated through scholarly publications such as conference presentations, journal articles, book chapters, and through the required milestone reporting to the [REDACTED].

Participant's rights

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

- Decline to answer any particular question;
- Withdraw from the study at any time before the end of the academic year;
- Ask any questions about the study at any time during participation;
- Provide information on the understanding that your name will not be used unless you give permission to the researcher;
- Be given access to a summary of the project findings when it is concluded.

Project contacts



This project has been reviewed and approved by the [REDACTED] Ethics Committee. [REDACTED] If you have any concerns about the conduct of this research, please contact [REDACTED] Ethics Committee: [REDACTED]

8.4 Student participant consent form



CONSENT FORM

FOR POSTGRADUATE STUDENTS

I have read the information sheet and have had any questions about the research answered to my satisfaction.

I understand that:

- I can ask further questions about the research at any time
- I can withdraw my participation at any time
- My name will not be used and the identity of all involved will be protected
- My lecturers will not be aware of whether or not I have chosen to participate in the research
- This research is separate from the usual course evaluations required by universities
- Any information gathered will be used to improve the [redacted] [redacted] for future students and to disseminate information about the programme to other professionals in the field.

I understand that I can choose to participate in some or all of the data collection activities:

- Yes No I agree that information relating to my learning and assessment can be accessed by the lead researcher
- Yes No I agree to participate in the online survey at the start and end of the year

Name:

Signature:

Date:

Valid email address for 2011: