Connectedness – Student and staff perceptions of synchronous and asynchronous delivery in distance education

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Candidate’s Statement

I certify that this report is the result of my own work except where otherwise acknowledged and has not been submitted, in part or in full, for any other papers or degrees for which credit or qualifications have been granted.

Signed

(Philip Roy)

Date: January 2010
Abstract

Web-based distance education started mostly as asynchronous delivery due to the technical limitations of the Internet. As delivery via the Internet is now growing in capability and form, the following research project examines the use of asynchronous and synchronous delivery in a university context using two specific technologies.

Perceptions related to the use of the synchronous and asynchronous components of Adobe Acrobat Connect Pro were gathered through recorded interviews with staff and an online (web-based) anonymous survey of students, providing both qualitative and quantitative data. An analysis of the data based upon the project’s research questions was then undertaken and used to discuss the affordances that the technologies provided, as well as the pedagogical, technical and support issues that need to be addressed.

Students and staff supported a mix of asynchronous (Adobe Presenter) and synchronous (Adobe Connect) learning opportunities in teaching and learning, and were able to perceive the strengths and weaknesses of both forms of delivery. Adobe Presenter presentations were perceived as useful by students for providing self-paced material that was enhanced through the use of audio, video, quizzes and multimedia interactivity. Adobe Connect meetings were seen as useful as a means of providing educational opportunities for live presentations and discussion, interaction though quizzes and polls, student or guest staff presentations, screen sharing and small group discussions. These meetings created a sense of immediacy, increased the sense of community amongst students and were seen as contributing factors to improving dialogue amongst all course participants.

Providing technical support for students and staff, introductory sessions to students engaging in synchronous meetings, as well as professional development opportunities on the effective use of asynchronous presentations and synchronous meetings is crucial if these technologies are to be used effectively.

This requires a combination of policy, planning, resources and support from technical, student support and staff professional development units, as well as staff with a passion, expertise and vision in the effective use of these systems, to promote and encourage their use.
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Thanks to Professor Emeritus Barrie Macdonald and Dr. Julie Bunnell for supporting my work and interest, including providing encouragement, time, funds and support, and for allowing this area to play a major role in my work in recent years.

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Regards,

Philip Roy
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Introduction

Every day we make decisions about how we wish to communicate with friends, family and colleagues. These decisions are made based upon a number of factors, including both the physical and time separation of the people involved, as well as sometimes making decisions based upon the technology we have at hand and how it will help us engage in communication and discussion with others.

These conversations can occur in real time or in a manner that allows one party or the other to respond in their own time. This is effectively the difference between synchronous and asynchronous communication, which Levin, He and Robbins (2006) describe as discussions occurring at the same time (synchronous) as opposed to occurring over time (asynchronous), and Haefner (2000) describes as a difference between communication which happens at the same time (synchronous), as opposed to communication that can wait (asynchronous). When it comes to technology, systems such as email or SMS/text messaging provide an asynchronous form of communication, whilst the telephone, Instant Messaging, VoIP and face-to-face meetings provide a synchronous form of communication.

Because many of the technologies available to us now are relatively new, with distance education historically, the opportunity to make use of these systems hasn’t always been available. “Asynchronous DE has its roots in correspondence education, wherein learners were truly independent, connected to an instructor or tutor by the postal system; communication was truly asynchronous because of postal delays” (Bernard, et al., 2004, p. 387). At the same time, issues such as connectivity and low bandwidth networks, have meant that many of these systems have previously been under utilised (Sherlock, 2007).

This has meant that web-based distance education started mostly as asynchronous delivery. This matched well in a New Zealand context, with an extramural approach that saw students study from home, often geographically disperse, using printed material with contact courses or teleconferences used to engage in synchronous communication when it was felt it was appropriate.

Sherlock (2007, p. 1) agrees that asynchronous delivery dominated because of bandwidth requirements that were initially too expensive for colleges and students, and that until recently, user-friendly and affordable systems were not readily available. But at the same time, Sherlock argues that:

A third reason for the dominance of asynchronous text discussion in distance education is perhaps the one still most prevalent: It is convenient for both student and instructor. One of the strongest selling points of distance education has been that it could be done anytime, anywhere. Thus, for many online instructors and students, not having to be online at a particular day and time is one of the most attractive features of a distance education course.

The U. S. Department of Education (2009, p. 1) in a recent meta-analysis of evidence-based practice in online learning suggests that “earlier online programs tended to implement one model or the other. More recent applications tend to combine multiple forms of synchronous and asynchronous online interactions as well as occasional face-to-face interactions.”

Given that synchronous delivery in distance education is now growing in capability, the following research project examines the use of asynchronous and synchronous delivery in a university context using two specific technologies, and explores the perceived preferences of both approaches by students and staff. To set the scene, the two main technologies being used
are introduced next, and then the purpose, background and rationale for the research is explored.

Adobe Presenter and Adobe Connect

Collectively, Adobe Connect and Adobe Presenter are part of a commercial server-software system known as Adobe Acrobat Connect Pro\(^1\), which was formerly known as Macromedia Breeze. The researcher is responsible for bringing the system into the University, trialling and establishing its use and is currently the administrator for access to the system, as well as providing technical and pedagogical support to staff and students. The system is currently accessible by staff within two of five Colleges, with some smaller groups also having access.

Adobe Presenter presentations are enhanced versions of PowerPoint files that have had audio, video, quizzes and/or attachments added. The presentation itself is usually comprised of HTML and Adobe Flash files that contain images, video and/or audio. These are then made available to an audience either via a web link (to view the presentation online), sent as a zipped (compressed) file or can also be converted and distributed as a multimedia PDF document to be viewed online or with the free Adobe Reader application, including distribution via CD.

Adobe Presenter presentations can be viewed at any time and do not require the involvement of anyone else other than the person viewing the presentation. The presentations are cross-browser and cross-platform (PC, Mac, Linux) compatible. Some examples of Presenter presentations can be seen below in Figure 1.

![Figure 1 – Example images of Adobe Presenter presentations](http://www.adobe.com/products/acrobatconnectpro/)

\(^1\)http://www.adobe.com/products/acrobatconnectpro/
The usefulness of Adobe Presenter is that presentations are created within an existing software application (Microsoft PowerPoint on a PC) that many will be familiar with, and that typically, the author will record audio on a slide-by-slide basis. These multimedia presentations can then be delivered in a variety of ways, with the audience able to view and review the presentation in their own time.

Adobe Connect Meetings (hereafter referred to as Adobe Connect) take place online. Participants are provided with a web link to access the live virtual meeting environment, with meetings delivered synchronously using a combination of HTML and Adobe Flash. Once in the meeting environment, there is an opportunity to chat via a text interface, listen to a live presenter, respond via audio, share PowerPoint files, participate in polls and breakout rooms, as well as communicate via web cameras and headsets, share screens and remotely control another participant’s computer.

Meetings can be recorded as they occur. The meeting host (the person responsible for running the meeting) is able to determine what interaction and activities occur within a meeting, assign rights to perform various tasks (such as assign the right for a participant to use a web camera) and can edit meeting recordings if they so wish. These recordings can be made available for viewing online via a web link, or the meeting recording can be saved as an FLV (Flash Video file) for distribution or download.

Some examples of Connect meetings can be seen below in Figure 2.

Figure 2 – Example images of Adobe Connect meetings
For synchronous meetings, all participants require a computer with an Internet connection. Whilst the system will function on dial-up connections, activities such as web-camera discussions, breakout rooms, video etc, benefit from greater connectivity speeds with broadband or access to a Local Area Network (LAN).

Adobe Connect is useful when wanting to hold live meetings with others and to interact with participants in a way that would not be achieved via asynchronous activities such as discussion forum postings. Meeting recordings are useful for revision and to provide to those participants unable to attend the synchronous session.

Research Background

The decision to focus research in this area is based upon work the researcher has conducted as a General Staff member at Massey University, New Zealand. In 2004, the researcher received funding as a Flexible Learning Leader in New Zealand (FLLinNZ) from a Government e-Learning Collaborative Development Fund (eCDF). The focus of the year of exploration was on video streaming and web-conferencing systems and resulted in Adobe Connect (formerly Macromedia Breeze) coming in to Massey University for trial and subsequent purchase.

At the introduction of the technology to the University, the researcher ran a series of short anonymous student surveys each semester during the period 2006-2007 and received input into the development of the surveys from both academic staff and non-academic staff. This survey also received Massey University Human Ethics Committee approval at the time (Massey University Human Ethics Committee: Southern B, Application 06/21). The results of all previous surveys are available on the researcher’s e-learning website2.

Research aims and rationale

The purpose of the study was to investigate perceptions and preferences of staff and students related to asynchronous and synchronous teaching and learning.

Part of the decision to focus the research in this area stemmed from the work the researcher had done and the responsibilities he has held within a university context, as noted in the previous background information. The Adobe Connect Pro system has allowed staff and students to participate in both synchronous and asynchronous activities, and it is the response to the technologies and approaches to future usage that the research explores.

There has been a wide-ranging discussion in the distance education community regarding the effectiveness of asynchronous and synchronous communication and collaboration, with many research articles discussing the differences, strengths and weaknesses of both approaches (Corbeil, 2006; Haefner, 2000; Rovai, 2002b; Stodel, Thompson, & MacDonald, 2006).

Kiili (2005, p. 303) comments that the web has often been used simply as a means of distributing information and that this conflicts with the currently popular constructivist approach to learning and that “technologies are too often used as substitute teachers that deliver information to learners rather than as learning tools that support the active learning process”.

Corbeil (2006) suggests that the use of asynchronous tools were firstly a matter “educational convenience” at a time that synchronous tools were limited in their capacity, but also acknowledges that even with recent advancements, there is a need for a careful blending of approaches if one is to incorporate synchronous tools into teaching online.

2 http://elearning.massey.ac.nz/
In the literature, there is some debate over asynchronous versus synchronous teaching, communication and collaboration. This research project explored some aspects of the debate within the literature, as well as examined the context under which staff made decisions about appropriate methods of teaching and the affordances that the technologies provided. Students were asked to relate their views on the effectiveness of these approaches to their learning and what they perceived the benefits to be, as well as indicate preferences for their own study.

A mixed methods research approach was chosen, with this research approach defined as a “class of research where the research mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts language into a single study” (R. B. Johnson & Onwuegbuzie, 2004, p. 17).

This approach provided the opportunity for collection of data from multiple sources and allowed “for complementarity and a counterbalance of strengths and weaknesses of each technique” (Reams & Twale, 2008, p. 134). “The goal of mixed methods research is not to replace either of these approaches but rather to draw from the strengths and minimize the weaknesses of both in single research studies and across studies” (R. B. Johnson & Onwuegbuzie, 2004, pp. 14-15).

Research questions

As new technologies are implemented within a university, the provision of enhanced interaction and collaboration not only create an opportunity to determine new effective approaches to teaching that embrace these technologies, but at the same time, provide an opportunity to explore the staff and student views related to their use.

This research project looked at the people affected by these new approaches, the responses to them from a learning and teaching perspective, and asked what could be learnt from the experiences so far, in order to enhance delivery in the future. Specifically, the research sought to learn more about the following questions:

- What did students/staff perceive as the benefits/disadvantages of asynchronous delivery? What aspects of this mode of delivery were seen as useful?
- What did students/staff perceive as the benefits/disadvantages of synchronous delivery? What aspects of this mode of delivery were seen as useful?
- Which mode of delivery did they feel suited their learning/teaching?
- What are the implications for teaching and delivery of courses to distance education students?
- What support and professional development opportunities are needed?

The technologies discussed within this research are on the threshold of being centralised and the role that the researcher has taken previously will change. It is the researcher’s view that the primary focus concerning the type of support that should be put in place for staff and students should not be judged by the researcher, but determined by the staff and students who experience its use. This research is an opportunity for the views of these groups to be considered.

Literature Review

Research into synchronous communication has often looked at aspects of teaching and learning that have been missing in asynchronous teaching due to the delivery method not matching with the traditional teaching approach of face-to-face lectures (Park & Bonk,
Various forms of synchronous communication (video, audio, telephone and web-based conferencing) bring back to distance education some aspects of the learning experience such as social cues, emotions, body language and tone, that may influence student learning and interaction (Vonderwell, 2003) and that have previously been missing due to technical limitations indicated earlier in this report.

As these new technologies have emerged, research into synchronous delivery in teaching and learning has often focused on the pedagogical shortcomings of the previous asynchronous approaches. Pattillo (2007, p. 110) highlights this when suggesting that synchronous delivery “should alleviate some of the problems or limitations present in Web-based courses that negatively impact interaction, communication, and dialogue”.

The benefits that online environments provide in both asynchronous and synchronous modes include students being able to engage in learning, and with each other, in a way that has previously been unavailable in distance education.

Instead of looking at what asynchronous communication is lacking in comparison with synchronous communication, a more effective approach would be to look at the exact opposite; what synchronous communication is unable to provide. This can include the ability to give students the time to think and develop their responses, to provide flexibility in the time allocated for and between discussions, to allow a detailed response that may be supported by references to literature or an opportunity to repeatedly examine the responses and discussions of others, allowing students to scaffold responses based upon the historic responses of others.

Social interaction, through which knowledge is constructed, can be achieved using technologies that foster discussion, interaction and communication. Modern technologies also allow for the recording of these interactions and for the dissemination of content.

Collaboration provides a way for educators to form a virtual community of learners in which members can engage in individual thinking, share opinions and beliefs and provide one another with feedback for professional and personal growth and change. (Ohlund, Yu, Jannasch-Pennell, & Digangi, 2000, p. 418)

One theory of learning that associates itself with the notion of growth and change is constructivism, which “espouses a learner-centred view of learners that are actively constructing rather than passively receiving knowledge. The learner rather than the teacher becomes the focus of the learning environment” (Torrisi-Steele, 2002).

In the constructivist approach, learners formulate understanding based on their experiences and whether these experiences can be assimilated into their current framework of understanding or if there is a need for a change in understanding to accommodate new experiences. Constructivism should not be seen as pedagogy itself but a theory on how learners construct knowledge.

Communication technologies have the capacity to provide an interactive environment that can support instructional methods required to facilitate constructivist principles. For these reasons, constructivism has become a popular epistemological position for many educators who are using technology-mediated learning. (Kanuka & Anderson, 1999, p. 4)

This research project explored the ability of both asynchronous and synchronous technologies to support this process. Whilst various forms of synchronous delivery are available (such as
teleconferencing and video conferencing) and have been for some time, it should be noted that the focus of this research report is related to web-based technologies specifically.

**Comparative studies and new approaches to synchronous delivery**

Text-based chat is the most common online synchronous approach to date, and this is reflected by the number of research articles that focus on this form of communication and collaboration. These systems allow for a number of participants to be online simultaneously and communicate by typing text comments, sentences and emoticons\(^3\) into a web page. Text chat systems make it difficult to convey feeling and emotions within the environment and can be difficult to co-ordinate, leading to frustration and disjointed conversation.

First, contributions are limited to two or three lines in length. Secondly, participants lack paralinguistic cues, such as eye contact, gesture, and facial expression. Finally, several participants can simultaneously compose and post responses to the same comment, resulting in multi-stranded conversations. (Burnett, 2003, p. 248)

Garrison, Anderson and Archer (2000, p. 90) point out the strengths of text based communication, and that “oral communication tends to be fast-paced, spontaneous, fleeting, and less structured than text-based communication”. However, they go on to comment that in a face-to-face context, oral communication also allows for “non-verbal or paralinguistic cues such as facial expression and tone of voice. Socially and emotionally, face-to-face oral communication is a rich medium”. These are all missing from a text-based synchronous conversation.

In research literature, the main focus for some time has been on asynchronous engagement with distance education students because it has been the most common option available. Experiments in early synchronous teaching using desktop conferencing weren’t all that successful.

When desktop videoconferencing technologies made their debut in the mid 1990s, it appeared that web-based distance education was on the verge of a major communications revolution. However, after a brief period of experimentation, desktop videoconferencing was abandoned by most distance education providers before it had a chance to fully evolve. (Corbeil, 2006, p. 388)

As bandwidth availability has increased and new developments have taken place in Internet technology, various approaches have been explored. However Corbeil (2006) argues that asynchronous communication has continued to dominate distance education. This is for a number of reasons that relate to convenience and the pedagogical approach to teaching and communication that surrounds it.

It is well known that the popularity of the online format is in large part due to the convenience it provides with regard to school location and class schedule constraints. The “anyplace, anytime” model of non-traditional, part-time adult learners’ preference for educational preparation is exactly what the online format implements. (Sabin & Higgs, 2007, p. 44)

Interestingly, research exploring new synchronous activities has often pitted this approach against previous delivery methods in comparative studies. Research focused on the strengths and weaknesses of each approach and whilst not intentional, conclusions in studies that commented on an overall preference by participants, created a sense that the research

\(^3\) http://en.wikipedia.org/wiki/Emoticon - An emoticon is a textual expression representing the face of a writer's mood or facial expression
evaluated whether the existing approach (asynchronous communication) continued to be preferred to a ‘new’ approach in the form of synchronous communication.

It is notable in this respect, that the evaluation of asynchronous communications dominated research and that as recently as 2007, it was being suggested that “minimal research on synchronous communication has been conducted” and that “of the research performed to date, studies of learners’ perspectives related to synchronous learning lag far behind” (Park & Bonk, 2007b, p. 246).

However the added benefit of asynchronous communication isn’t simply one about the convenience that Sabin and Higgs described. The ability to remove time constraints from within a discussion allows students the opportunity to reflect, review, move back to or branch previous discussions on to side topics, as well as fully develop and research responses before posting them to online environments.

In terms of academic staff providing material for students to review, the asynchronous approach meshes well with the traditional approach of providing printed study material, and allowing students time to read, view and review the material that they have received.

On the other hand, this approach to study and communication which, as Haefner (2000) suggests, takes place in a manner where communication ‘can wait’, may lead to a sense of dissatisfaction at the pace of the discussions or even a sense of separation, lack of spontaneity or engagement with the course and with fellow students, due to delayed feedback and questions being left unanswered (Park & Bonk, 2007a).

It is the contention of the researcher that there is no need to draw a conclusion that determines superiority of one method of delivery over another. As stated in the introduction to this report, recognition instead needs to be made of the strengths, weaknesses and opportunities within both approaches and develop teaching strategies that use these to their full potential. The focus should ultimately be on when we make use of these approaches and why we choose to do so.

…the challenge lies in finding ways to integrate synchronous communication into the asynchronous teaching model, thus preserving the flexibility and convenience of asynchronous communication while enhancing the overall efficiency and quality of communication through synchronous communication (Corbeil, 2006, pp. 389-390).

**Community of Inquiry – Collaboration, interaction and communication**

As noted earlier, constructivism has become popular amongst those supporting technology-mediated learning. Associated with the social constructivist view of learning, is the need for a collaborative learning environment to foster communication and community. The importance of such a community is highlighted in Garrison, Anderson and Archer’s Community of Inquiry model (2000) that proposes that learning takes place within a community comprised of three essential elements: cognitive presence, social presence and teaching presence.

They define cognitive presence as “the extent to which the participants in any particular configuration of a community of inquiry are able to construct meaning through sustained communication” (Garrison, et al., 2000, p. 89).

Collaboration is increasingly seen as critical across the range of educational activities, including intra- and inter-institutional activities of any size or scope. As the ways in which researchers, students and teachers can collaborate with each other increase,
knowledge is becoming a community property, and the construction of knowledge is becoming a community activity. (New Consortium Initiative & Educause, 2006, p. 4)

It can be seen that the notions of construction through communication within the field of cognitive presence, ties in with the social constructivist vision of communication and collaboration leading to a shared understanding and accommodation of new ideas. Chapman, Ramondt and Smiley (2005, pp. 221-222), comment on how an asynchronous environment makes such communication and collaboration challenging:

…the flow of conversation, the building on each other’s utterances in the light of new insight that constitutes dialogue, is interrupted by the asynchronous nature of the online communications. Members wait for some time before questions are answered, while in the gap other topics are pursued.

Pattillo (2007) suggests that “both chat rooms and threaded discussion strategies have limitations and are subject to criticisms. Inherent in both is the lack of face-to-face or voice communication”. However, it is important to not suggest that communication and collaboration can only occur within a synchronous environment.

Asynchronous discussion facilitates student learning and higher-level thinking skills, perhaps due to the cognitive processing required in writing, time to reflect upon posted messages and consider written responses, and the public and permanent nature of online postings. (G. Johnson, 2006, p. 51)

The second aspect of the Community of Inquiry model is social presence, which is defined as “the ability of participants in the Community of Inquiry to project their personal characteristics into the community, thereby presenting themselves to the other participants as ‘real people’” (Garrison, et al., 2000, p. 89).

Russo and Benson (2005, p. 54) state that “student interaction online, like student interaction in face-to-face classrooms, is a critical component of the learning context”. The capabilities of various systems available for use in online learning now make it easier “to establish social presence, to model various types of interactions, and to foster community development” (Vesely, Bloom, & Sherlock, 2007).

In a study of the relationship between perceptions of online presence and cognitive learning outcomes, Russo and Benson (2005) found that there was a significant correlation between scores on affective learning and the student’s perceptions of the presence of the instructor and others. “Online interaction among peers offers more than academic exchange. Social support and content-related interaction both can support idea development, affirmation, and encouragement” (p. 59).

Anderson and Garrison (1995, pp. 195-196) support this in research on student perceptions of audio conferencing where they found that results from student surveys and analysis of student interviews, confirmed “that instructional designs which support sustained interaction between (amongst) student(s) and teacher enhance the development of a community of inquiry and critical thinking”.

LaRose and Whitten (2000, p. 324) talk of the concept of student immediacy and acknowledge that from a social cognitive perspective, it isn’t only the instructor who can direct reinforcement and the opportunity for a valued social relationship, but that “other students reinforce each other’s behavior through verbal comments and nonverbal communication”.

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Chapman, Ramondt and Smiley (2005, p. 228) suggests an even more positive outcome that sees students supporting each other and offering the instructor opportunities to focus on specific activities:

> We have also found that the collaborative nature of online community facilitates self-reliance within the group and reduces reliance on the learning-facilitator/tutor. Once participants become accustomed to the transparency of online conversations, their participation frees the learning-facilitator from the task of answering routine and technical questions.

Interestingly, when asked to rank the importance of presence online in research by Vesely, Bloom and Sherlock (2007, p. 1) students and staff differed in ranking which groups were of greater importance, with students ranking “instructor modeling as the most important factor in building community in online courses, and instructors ranked it as fourth in importance. Conversely, instructors rank ordered interaction and dialogue with colleagues as first, while students perceived this factor as fourth in importance.”

Consistent with the traditional face-to-face classroom, online students will get out of a learning community what they put into it. If they are passive and choose not to engage in community, then the benefits they derive will be limited. Ideally, students will be intentional about their learning and actively seek to build and sustain the learning community. However, the education literature suggests that instructors play a key role in motivating students to engage as learning community members. (Vesely, et al., 2007, pp. 2-3)

This brings us to the third element, teaching presence, which includes the functions of designing the educational experience, selecting content and developing learning activities and assessment. Teaching presence has been defined as having three distinct dimensions: instructional design and organisation, facilitating discourse, and direct instruction (Arbaugh & Hwang, 2006; Garrison, et al., 2000).

Instructional design includes activities such as “setting curriculum, designing methods, establishing time parameters, utilizing the medium effectively, and establishing group norms via conventions of ‘netiquette’” (Shea, Sau Li, & Pickett, 2006, p. 177). Facilitating discourse includes activities that involve both the instructor and participants, providing the opportunity for them to engage with each other.

> It is through effective design of opportunities to fully engage in such discourse that learners can participate in the pedagogical processes that support learning. These processes include the articulation and presentation of current views, the consideration of alternative views expressed in course materials and by classmates and instructors. Ideally these processes also include opportunities to reflect and re-think previous positions, and the consequent integration of new ideas into existing cognitive structures. (Shea, et al., 2006, pp. 176-177)

Finally, direct instruction includes presenting content, questions, responding to technical concerns, summarising and directing discussion, as well as injecting knowledge from diverse sources. (Garrison, et al., 2000; Shea, et al., 2006).

The Community of Inquiry model suggests that that three presences of cognitive, social and teaching presence are interconnected, and that they influence or impact upon the community. It is the role of the instructor to help facilitate and develop a sense of community, and this in turn will improve social presence by creating an atmosphere of trust, open communication and group cohesion (Garrison, Cleveland-Innes, & Fung, 2009).
In research involving students in 32 different colleges, Shea, Li and Pickett (2006) analysed responses from students concerning their feelings related to a sense of community in classroom-based and online environments using an evaluation system known as the Classroom Community Index, developed by Rovai (2002a). They found, for example, that teacher presence, had a clear impact on social presence within the community:

Clearly, these results indicate that, when the online instructor is leading, students tend to follow; higher levels of teaching (and social) presence on the part of the instructor tend to lead to higher levels of social presence from the students. However, when the instructor does not take on this role, students do not have an educational orchestrator and their corresponding level of presence diminishes. (Shea, et al., 2009)

This is not to suggest that teaching presence plays a more significant role, but simply that the presences are interrelated. Indeed, Arbaugh and Hwang (2006, p. 17) state the importance of social presence in the roles that the students play:

They bring to the learning interactions their different background and experiences that consequently enrich ideas and contribute to the richness and depths of the learning experience. Without the exchange of ideas and ensuing discussions, it will be difficult for students to understand the richness of concepts and their different applications and implications under different situations - situations that any one student may only have limited knowledge of but together as a group, through discussions, they could gain from the knowledge of others.

Arbaugh and Hawk (2006, p. 17) also found “strong emerging relationships relating all the three components to each other” and in recent research, Garrison, Cleveland-Innes and Fung (2009, p. 10) looked at the causal relationships of the presences from a student perspective and found that “there is evidence that the three presences are interconnected and influence each other…That is, it was shown through student perceptions that teaching presence directly influences the perception of social and cognitive presence. Perceptions of social presence also significantly predict perceptions of cognitive presence”.

The literature has shown that both asynchronous and synchronous delivery provides opportunities to support effective learning. Both approaches have been impacted by their limitations, from a technical and a pedagogical perspective. This is particularly true of the research literature that investigates synchronous teaching, which is not as extensive and has been impacted by comparisons with the more embedded asynchronous teaching delivery approach. As the affordances that the technologies provide increases, the focus has begun to change from one that compares the two delivery methods to one that explores the effective use of both approaches.

The research questions contained within this report explore staff and student preferences and perceptions in this area. The literature has also shown the importance of their views in establishing effective learning environments. How the technologies involved support and sustain an effective community of inquiry, and how they support discourse, shared construction of knowledge and a sense of presence online, is also explored and discussed.

**Research Methodology and Procedures**

Perceptions related to the use of the synchronous and asynchronous components of Adobe Connect and Adobe Presenter were gathered through recorded interviews with staff and an online (web-based) anonymous survey of students, providing both qualitative and quantitative data. An analysis of this data based upon the project’s research questions was then undertaken.
and used to discuss the affordances that the technologies provided, as well as the pedagogical and technical issues that need to be addressed.

Information related to the two data collection activities, including sample size, data gathering tools and analysis is described in the following sections.

Sample

In order for the student participants to remain anonymous to the researcher, academic (teaching) staff on the compulsory mailing list for University staff using either Adobe Connect or Adobe Presenter were informed of the student survey and asked to indicate a willingness to email their students. Students were therefore from a population that had experienced these technologies, but the initial sample size was dependent upon staff agreeing to email students, and the response rate was dependent upon student’s willingness to participate. Some staff declined the opportunity to have their students participate in the survey. Those that agreed were emailed an invitation (see Appendix 1) to the survey and asked to forward this on. At the same time, to calculate the sample size of the student population, they indicated their class sizes to the researcher.

Staff to be interviewed were selected through an analysis of the Adobe Connect server for usage and content (meeting recordings and presentations). The four staff using Adobe Connect and the four staff using Adobe Presenter the most were to be contacted, to ensure a balance between those using presentations and meetings. Two staff appeared on both lists, reducing the number invited to participate to 6, of which 3 agreed to be interviewed. Both the initial listing of staff and the 3 who ultimately agreed, provided a reasonable mix of subject areas. It should be noted that the participation of these staff isn’t intended to reflect a statistical sampling, but a purposeful selection. It was also not possible to interview a selection of staff from across the entire University, as the system was only available within two Colleges at the time of the research.

Procedure – Student survey

A previous student survey was used as a starting point to develop a more focused survey for this research project, and a number of staff (academic, technical, policy development and instructional designers) were invited to view a draft of the project survey and recommend any amendments needed.

The online survey comprised 38 multi-choice, Likert scale or short answer questions, grouped into topic sections. The opening questions gained an understanding of the student population answering the questions, and then the survey branched to ask questions on Adobe Presenter and Adobe Connect meetings. In this respect, students would not have been presented with all questions unless they experienced both methods of delivery. Final questions sought feedback from all students about preferences related to asynchronous and synchronous learning.

The survey was delivered using a University installation of an open source web-based survey system, with administration access only available to the researcher. The survey ran for 4 weeks in the latter half of the second semester 2009. Details of the questions asked in the survey can be found in Appendix 2.

For the student survey it is difficult to completely ascertain the potential number of students who were able to complete the survey. This is for a number of reasons, including the fact that

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4 http://limesurvey.org/
the Adobe Connect system isn’t currently fully integrated with the staff and student directory at the University, meaning tracking of usage is difficult.

**Procedure – Staff Interviews**

As indicated earlier, 3 staff members within the University (who were known to the researcher) agreed to participate in an interview and were asked a series of questions related to their teaching and experiences in distance education delivery. These questions were not made available to the staff member prior to the interview to ensure responses were spontaneous.

Interviews of approximately 1 hour in duration per interview took place and comprised the pre-prepared questions as the basis for the interview, although using a semi-structured approach (Denscombe, 2007) allowed for freedom of discussion within the interview. Staff were offered a recording of the interview and typed notes that the researcher took after reviewing the audio recording. These notes included specific quotes that the researcher indicated might be used within the final research project and staff were then given the opportunity to amend or make alterations to this document to ensure that the comments accurately reflected their views.

The interview consent form and the standard questions asked in the interviews can be found in Appendix 3.

**Ethical considerations**

Research conducted by staff and students at Massey University must take into account ethical considerations as outlined in the Code of Ethical Conduct. Ethical considerations for both students and staff included anonymity, confidentiality and informed consent. Using the approved evaluation process of the University, both the student survey and staff interviews were considered to be low risk to the participants and the appropriate Low Risk Notification forms were submitted to the Massey University Human Ethics Committee. Copies of the confirmation letters from the Massey University Human Ethics Committee related to the two Low Risk Notifications can be found in Appendix 4.

Students remained anonymous to the researcher, as communication with them was via the academic staff involved in course teaching. Student privacy was maintained as the online survey system neither sought nor tracked any identifiable information about the students. Staff were briefed at the commencement of the interview process as to the purpose of the interview, how their privacy and anonymity would be maintained and how the collected information would be stored. They were able to ask questions to seek clarification related to the process and were then provided with a sheet outlining this information and asked to sign a copy to confirm that they understood and agreed to the interview proceeding.

Of prime consideration to the researcher was the informed consent for both staff and student participants. This ensured that participants had free choice to decide whether to participate or not, understood the details of the research, what participation (and possible risks) were involved, not feel they were under any force, coercion or duress to be involved, understood the confidentiality of the research and had the opportunity to remove themselves from participation at any point (Corti, Day, & Backhouse, 2000; Thorne, 1980).

This information was conveyed to the students who accessed the online survey at the commencement of that survey. Their right to withdraw and exit the survey was maintained

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5 [http://www.massey.ac.nz/?c86a90952e](http://www.massey.ac.nz/?c86a90952e)
and communicated to them in the initial email invitation, when commencing the survey and throughout the survey process.

Interview questions were developed and also considered for their impact upon teaching staff. For the sake of anonymity, only the researcher knew the identity of the participants and whilst some information relayed by them in their recorded interviews allowed for their identification (e.g., discussion of their professional background and teaching experience), this information is not contained within this report. Staff were aware that the outcomes of this report may be used to improve services, professional development opportunities and the delivery of papers taught both at the University and elsewhere.

Validity and reliability

A web-based questionnaire was chosen as the most appropriate method for surveying students, providing “an immediate means of returning surveys” (Moss & Hendry, 2002, p. 584), and that the “flexibility, accuracy and modest cost of the sample survey make it an extremely effective method of gathering information” (Brunt, 2001, p. 179).

It should also be noted that those staff who chose not to involve their students in the survey, gave reasons that had no relation to the technologies themselves, suggesting that their decision to exclude their students was not on the basis of bias against the technologies.

Denscombe (2007, pp. 7-8) describes a number of advantages of using surveys, including the fact that they produce empirical data (there has been an active attempt to gather information from the appropriate groups) and can allow for wide and inclusive coverage. Surveys lend themselves to quantitative data, making the formulation of results easy. However it must also be understood that such an approach therefore has limitations.

Reja, Manfreda and Vehovar (2003) suggest that considerable attention needs to be paid to the composition and wording of surveys and open-ended questions. They comment that web surveys effectively require “self-administration” by the respondent and (as there is no interviewer to intervene or to seek clarification from), there is potential for misunderstanding. One of the techniques employed to try and reduce misunderstanding was (as discussed) to have the survey assessed by a number of staff within the University prior to it being made available.

Because of the structure of the online system, questions were generally of a multi-choice or multi-option nature, however some open-ended questions were also asked. The amount of questions asked, the estimated time taken to complete the survey and the number of open-ended questions were also considered in development. Data recording inaccuracy by the researcher was reduced as, in a web-based survey “the administrator’s need for data entry is entirely eliminated because this task is carried out by survey respondents. Time consuming data entry errors can be eliminated through automated data checking” (Schmidt, 1997, p. 2), with the export of statistical summaries also accurately managed by the survey system.

It is difficult to gauge the accuracy and honesty of the information supplied (or to back the results up with any other observational data), and approaches such as internet surveys may create bias on the basis that they exclude those unable to take part (Denscombe, 2007, p. 10). Given that the students surveyed in this research experienced asynchronous and/or synchronous activity online, the issue of bias related to Internet access is not relevant in this case. Specifically, the survey assessed the opinions of those with some form of Internet access.
Whilst the level of information collected could allow for a fine-grained, statistical analysis of data (for example, analysis of student perceptions based upon gender or technical competence), the scope of the research project does not. Instead, an analysis of the information within the student survey was undertaken in relation to the project’s research questions and forms part of the discussion later in this report.

The staff interviews were incorporated into the research project to provide qualitative data from a teaching perspective, to compare and contrast alongside the quantitative and qualitative student information.

…qualitative research seeks depth rather than breadth. Instead of drawing from a large, representative sample of an entire population of interest, qualitative researchers seek to acquire in-depth and intimate information about a smaller group of persons. (Ambert, Adler, Adler, & Detzner, 1995, p. 880)

Concern could be raised that there is some form of bias favouring the Adobe Connect and Adobe Presenter systems present with the staff interviewed (given that they have opted to make use of these technologies), however the purpose of the interviews was not to gauge the benefits of these systems over others, but to understand why they decided to use them and the approaches in delivery that best suited their teaching. Whilst typed notes will lose some of the information present in the interview – “Lost in the way in which things were said, the pacing, the intonation, and the emphasis in the talk” (Polkinghorne, 2005, p. 142) – by asking all staff to review the notes of their interview, accuracy in view and meaning was retained as much as possible.

The fact that the interview is recorded does however bring some degree of intrusion into the interview and, given that the interviewee is aware of this recording, some hesitancy and structuring of responses might have occurred, as opposed to those in a less formal conversation (Scott & Usher, 2004). The respondent validation (Delamont, 1992) approach selected by the researcher (where staff were given the opportunity to ensure the accuracy of the written notes) has both positive and negative outcomes. Staff could have used this as an opportunity to change spontaneous comments to ones more based upon reflection and consideration that took place after the interview. However in the case of this research project, only 1 of the 3 staff asked for any changes to the notes, and in this instance it was a minor change to two sentences to make the point more understandable to those external to the interview. The positive aspect to such an approach is an opportunity for the interviewee to ensure their views are portrayed accurately.

Bias of the interviewer must also be taken into account, given that the researcher is also the staff member responsible for bringing these technologies into the University. The relationship between the researcher and academic staff interviewed was considered, notably what Goldstein (2000) describes as aspects of power and privilege in that relationship. This was to ensure that the researcher didn’t manipulate the responses or discussions within interviews related to the technologies involved. However, as the research questions used within the interviews did not focus on an evaluation of the tools themselves, but on how staff perceive the benefits of two forms of delivery whilst making use of the technologies in their university teaching, the potential to influence responses is removed given that the researcher is not a participant in university teaching.
Data Analysis and Discussion

Survey challenges

A number of difficulties arose during the survey period concerning the method used to contact students. Because of the need for anonymity, the researcher relied on others to both express a willingness to contact students and to complete that process. In some instances, teaching staff did not respond to requests to support the survey or contacted students late in the survey period. In other instances, the timing of the survey was not appropriate as the students were yet to use Adobe Connect within their course. In a small group of papers staff had recently surveyed their students on the use of Adobe Presenter and were unwilling to ask their students to complete a second survey. These students were therefore excluded from the survey population.

Because of the branching nature of the survey, response data often contained a “Non-complete” value. For example, if a student indicated in Part 2 of the survey that they had not experienced Adobe Presenter presentations, the survey system immediately moved them on to Part 4 of the survey. Therefore, in the Adobe Presenter response data these students would show up as a “non-complete” value. Such values were excluded in discussion that follows, because they do not reflect a decision by a student not to answer a question, but that the question was never available to them to answer. It is mentioned here, to explain why the total number of responses to a question may appear to vary at times.

General results and study preferences

For the student survey, academic staff were willing to email a total of 361 students that had experienced Adobe Connect and/or Adobe Presenter in their courses. 83 responses were received during the four weeks that the survey ran, giving a response rate of 23%.

Table 1 provides the demographic characteristics of the student respondents. There were a large proportion of extramural/distance students (as expected) but the large number of respondents who were female was an unexpected result. There was a broad range of ages and it is interesting to note that 24% of students reported they were studying fulltime and the majority appear to be doing so at a distance as opposed to studying internally on campus. The level at which the students were studying varied, with a large portion studying an undergraduate degree, with a few Post-Graduate Diploma and Masters level students also represented.

Students were asked to indicate their computer ability, with a very high proportion (97%) indicating they considered themselves to be an “Expert” or “Very Capable” and only 3% of students considering themselves not to be very capable or a novice when it came to the use of a computer.

Interestingly, whilst 91.6% of students indicated they were studying extramurally, when asked to indicate their preferred study mode, the number of those wishing to study extramurally dropped to 77% and those wanting to study internally increased (21%), with reasons for this being reflected in the comments from students. Virtually all students studying or preferring extramural study commented on the flexibility that it provided, with most in fulltime employment or responsible for caring for children. Others commented that extramural study was due to their geographic location and also noted the impact that this had on their experience:
“Living in an area where there is no university and having a family I have had no choice. I do miss having others to discuss content with.”

Those studying or preferring to study internally stated a number of reasons, which referred to the contact they had with “other human beings!” such as their peers, support services or the staff that taught the courses. Others commented that attendance on campus helped them with their approach to study:

“I like being able to go to lectures and interact with those around me. I find it an easier environment to learn in rather than having to discipline myself to pull out my extramural paper and work on it individually.”

<table>
<thead>
<tr>
<th>Demographic characteristics</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
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<tbody>
<tr>
<td><strong>Gender</strong></td>
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<tr>
<td>Female</td>
<td>61</td>
<td>73.5</td>
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<tr>
<td>Male</td>
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<tr>
<td><strong>Age</strong></td>
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<tr>
<td>Up to 19 years old</td>
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<td>4.8</td>
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<tr>
<td>20 – 27 years old</td>
<td>14</td>
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</tr>
<tr>
<td>28 – 35 years old</td>
<td>14</td>
<td>16.9</td>
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<tr>
<td>36 - 43 years old</td>
<td>20</td>
<td>24</td>
</tr>
<tr>
<td>44 – 51 years old</td>
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<td>24</td>
</tr>
<tr>
<td>52 – 59 years old</td>
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<td>13.4</td>
</tr>
<tr>
<td><strong>Year of study</strong></td>
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<td></td>
</tr>
<tr>
<td>First</td>
<td>12</td>
<td>14.5</td>
</tr>
<tr>
<td>Second</td>
<td>19</td>
<td>22.9</td>
</tr>
<tr>
<td>Third</td>
<td>25</td>
<td>30.1</td>
</tr>
<tr>
<td>Fourth</td>
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<td>12</td>
</tr>
<tr>
<td>Fifth</td>
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<td>Sixth or higher</td>
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<td>13.3</td>
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<tr>
<td>Internal</td>
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<td>19.3</td>
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<tr>
<td>Accounting</td>
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<td>19.3</td>
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<tr>
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</tr>
<tr>
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<td>2.4</td>
</tr>
<tr>
<td>Resource and environmental planning</td>
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<td>2.4</td>
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<tr>
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<tr>
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</table>

Table 1 – Demographic characteristics of student survey respondents
For those unable to study on campus, the notion of transactional distance is an important one to consider. Moore (1997) talks about the concept as a distance that is not measured geographically, but one that is experienced by a distance education student due to separation, and that this affects both teaching and learning:

> With separation there is a psychological and communications space to be crossed, a space of potential misunderstanding between the inputs of instructor and those of the learner. It is this psychological and communications space that is the transactional distance. (Moore, 1997, p. 22)

One of the aims of the researcher in introducing the technologies to the University was to decrease the sense of transactional distance felt by students studying at a distance, the impact that this has on both teaching and learning processes, and allow for asynchronous and synchronous opportunities for collaboration and communication. How well the two main technologies support this, is explored in the remainder of the discussion concerning the survey results.

> …highly interactive electronic teleconference media, especially personal computers and audio conference media, permit a more intensive, more personal, more individual, more dynamic dialogue than can be achieved in using a recorded medium. Programmes that use such media are therefore likely to bridge the sectional, distance more effectively than programmes using recorded media. (Moore, 1997, p. 23)

Earlier, the concept of teaching presence was discussed in relation to the Community of Inquiry model (Garrison, et al., 2000) and in the analysis that follows, it will be shown that students felt that teaching presence was increased by the use of the technologies involved. Arbaugh and Hwang (2006, p. 10) commented that “teaching presence can be argued to be a mechanism for bridging the transactional distance between learner and instructor”.

### Staff and student perceptions of asynchronous delivery

For this section of the survey, 56 out of 83 students indicated they had experienced Adobe Presenter pre-recorded presentations. Figure 3 shows the results of opinions of students to the presentations they experienced. It is notable that 87% of students strongly agreed or agreed that the use of presentations enhanced the quality of the course they were enrolled in. 82% agreed or strongly agreed that they learned to view the presentations quickly, that they enjoyed the interactivity of the presentations (84%) and that the use of audio and/or video enhanced their learning experience (87.5%).

In other data collected elsewhere in the survey, the use of audio rated highly and was used a lot by academic staff to enhance presentations. The use of video was seen in a reasonably positive light, but a low response rate suggests it was not used often. Video of the academic staff member as a ‘talking head’ (i.e., a camera shot that showed the staff member talking to camera) produced mixed results in terms of how students viewed the value of the video, but was also used scarcely by staff. Staff occasionally included a text ‘script’ of their commentary in their presentation and this received positive responses when it was used.

Students listed a number of advantages to the pre-recorded presentations, with the most common advantage being that the recordings could be viewed and reviewed at any time:

> “I can't attend a live lecture because of location, but with a pre-recorded presentation I can go over bits if I'm not clear on them.”
Figure 3 – Student perceptions of Adobe Presenter presentations
“You can always refer back to it later in the semester to hear the lecturer go over the slides/presentation. Going to be handy for exam prep”

Suggestions from students were that this functionality supported note taking by allowing them to pause the presentations, as well as the ability to review and re-listen, which one student commented on as being crucial when learning a new language.

“It's great because I could sit at work watching them or at home whenever I wanted and did not have to arrange a time to go to class and listen. Also I had the option of listening and or/reading. A bit of a mixture was good.”

One student suggested that the enhanced presentations “matched what is expected by students studying by distance in the 21st century”. Other students also commented on the enhanced features of the presentations:

“Any recorded presentation is fantastic as previously I could only get printed tuition. I don't have the opportunity to attend live lectures.”

Figure 4 shows that the 82% of the students indicated that the pre-recorded presentations somewhat improved or greatly improved their enthusiasm for study, 75% indicated it enhanced their time management of their study and 87.5% of students responded that it somewhat improved or greatly improved the clarity of their study. Students commented on their learning styles and that the audio commentary provided, as one respondent stated, an “opportunity for auditory learners to interact with information”. Schlosser and Burmesiter (2006) concur with the opportunity audio provides, stating that “auditory learners benefit from sound; learners that are multi-modal benefit from combining audio with visuals”. Students commented:

“I'm an audio learner so way better. Can turn the lecture on and listen to it while doing other tasks such as cooking dinner.”

“People learn in different ways. I find reading text very difficult to retain at my age. I learn better through audio visual methods.”

Bower and Richards (2005) saw similar responses when they surveyed students views on both standard PowerPoint and Adobe Presenter (known as Macromedia Breeze at the time) presentations, with “the Breeze group providing more positive final comments while the Standard group provided more negative final comments. The negative comments provided by the Breeze group were mainly technical (inability to print, poor quality audio, availability of hardware/software) and are foresee-ably surmountable whereas the criticisms of the Flat Text form were generally educational”.

One student in this research project commented that the improvements weren’t simply about the functionality, but that the functions allowed the teaching staff to explore new areas in an audio commentary, suggesting it provided an opportunity for “potentially a more animated illustration and discussion of the information – e.g. anecdotes, images etc.”, with another student suggesting that presentations “can lead you down a thought path, or offer arguments or discussion topics”.

Picking up on the potential of audio, one student commented on the potential of the presentations to help a staff member summarise findings:
Figure 4 – Student perceptions of Adobe Presenter presentations enhancing activities
“The voice adds a lot, and can express tone etc - obviously depends on skill of presenter. Probably also makes presenters think more about the pertinent points rather than send numerous[sic] readings that one has to wade through. That is - presentations tend to be quality not quantity.”

In a study of the use of small audio presentations, Dringus, Snyder and Terrell (2009, p. 5) also found that students perceived benefits to the use of pre-recorded audio in an asynchronous environment:

Students felt that audio clarifies the content of the text-based forum as well as adds a personal touch to the learning environment. A large percentage also noted that the audio improves connectivity and that either audio or a combination of audio and text is the modality they prefer in the forums discussion.

Despite the asynchronous tool not providing direct discussion functionality, students still indicated that the presentations added to communication within the course (see Figure 4). 45% of students stated that the tool greatly improved or somewhat improved peer-to-peer communication and 68% indicated it improved peer-to-lecturer communication. 75% of students indicated that that depth of discussions was greatly or somewhat improved.

However, the ability of the presentations to build a sense of community was only supported by 55% of students indicating it somewhat or greatly improved this function. 55% indicated that it somewhat or greatly improved the spontaneity of discussion, and it is notable that only 48% felt that the presentations greatly or somewhat improved helping enhance discussions that took place elsewhere (such as within a discussion forum or live meeting).

This suggests that whilst the pre-recorded presentations were notable in providing clarity and communication with and between students, the support for creating a sense of community and the enhancement to discussions elsewhere that they provided, was limited. The distinction here is between communication and discussion, and more consideration may need to be given to the incorporation of presentations into learning activities and the use of associated synchronous tools that will be discussed later.

Staff saw the benefit of pre-recorded presentations both from their own and the student’s point of view. They appreciated that students were able to view the presentations at any time, and the same could be said of the time in which the staff had to create the presentations. The ability to revise and reuse recordings was seen as a real benefit. All staff highlighted the functionality that the software provided in allowing the production of a presentation:

“The main benefit is with one computer, to have a full production studio, to deliver a lecture, the recording. The timing and animations are all preserved. And you do that with one piece of software.”

Traditionally the University has provided distance students with printed study material, commonly referred to as ‘Study Guides’ that usually comprise an administrative handbook and relevant readings for the year. One staff member commented, in relation to presentations, that “institutionally, we’ve been so inert as seeing the study guide as what we do”.

Interestingly, there were differing approaches to when the use of the asynchronous presentations occurred. One staff member used the presentations as a summing up on the discussions that had taken place for both the face-to-face internal students and for the distance students who had participated in online meetings (the staff member in fact opened access to the online meetings to all students so that internal students who had missed or wanted to re-attend a discussion could).
The other two staff used asynchronous presentations more often as a starting point to introduce a topic and to commence discussion. In the case of these two staff, the typical approach was to release a recorded presentation and then give the students time to review them and to email or post questions in a discussion forum about the topic the presentation introduced. These questions were then used as the basis for an online session related to the comments received and to clarify the points made. One staff member felt this made the best use of the limited teaching time available:

“As a lecturer, it’s not about ‘bang for your buck’…it’s about ‘bang for your time’ and what the time is that you put into the paper delivery that gets you the most back in terms of your interaction with the students.”

Perhaps highlighting the rigidity of the recorded presentations, one staff member who provided an online presentation to students, commented that “a presentation is good to give a foundation knowledge and the interactive [online sessions] is useful to test their understanding”, but later also expressed caution if too much time lapsed between these two events:

“Sometimes if a person is left with a delay between having a first and incorrect understanding and a second corrected understanding, it can be hard to remove the first incorrect understanding that they had. With this [Adobe Connect meetings] they can get a corrected understanding instantly by questioning and answering questions during a session.”

One student offered a detailed and sound educational opinion on the disadvantages of asynchronous presentations over synchronous meetings:

“If they were solely pre-recorded then this would not have been good as [you] loose[sic] the interplay and interaction between the students and lecturer. In the case of pre-recorded it becomes hard to pick up what is important. The communication gap in pre-recorded is maintained as the presenter is presenting at the level and in the direction that they think will convey the message to the students, and what the student receives based on their perceptions will be different. Unless there is a mechanism to query and interrogate the presenter this gap is maintained. The fact that this one-way communication can be replayed does not assist as if the gap is at a fundamental level it will be maintained which will simply increase the frustration of the students.”

This desire for immediacy or near immediacy in response was also supported in the survey data. As well as 86% of students agreeing or strongly agreeing with the statement “The use of presentations fitted in with my study patterns and I felt in control of the pace of my learning”, 55% also indicated a desire to interact with others at the same time as viewing presentations.

Another student referred to presentations as “one-way messaging” and others commented on not being able to ask questions or interact with the academic staff member at the same time. This creates a dilemma when trying to determine the most effective approach for delivery, because student needs cannot be met in the way they might wish - to have the time to view and review content when they wish, but also have the staff or peers available to them at that moment to engage in discussion.

When asked to compare the presentations to the printed readings that they experienced, one student commented that the recordings were too long, whilst others suggested that they didn’t go into the same detail as a reading, that staff could get side-tracked within the presentation and that the presentations by their nature, required a PC to be on and accessed to view. These recordings can be set to be only available from the University server, so for some students, it also meant an Internet connection was always required (50% stated that they were able and
did download presentations on to their PC, whilst 34% indicated they wished that this option had been available to them).

Voice expression and their ‘performance’ in presentations was something that staff commented on, with one suggesting:

“You can feel like you’re just reading off a script. Sometimes when I listen to them afterwards and when I’ve known that ‘there’s nobody out there’, my voice isn’t as lively as when I know that someone is listening to me. So one of the things that I have to work hard on, is imagining a class and speaking in the way I would to them.”

Williams and Fardon (2005) suggest that even enhancing presentations with audio alone may not be enough to meet the needs of the students, although it should be noted that their research related to the capture of ‘live’ presentations in a lecture theatre and not those typically created on a PC using Adobe Presenter:

The inability to see the lecturer when listening to a lecture can pose some problems. Depending on the lecturer’s own style, the ‘performance’ that s/he gives can be crucial to an understanding of the lecture content, with the use of gesture, facial expression and physical movement often used instead of voice to convey a particular message. Lecturing styles that greatly depend on physical communication will therefore suffer when transferred into an audio-only online format (Williams & Fardon, 2005, p. 5).

Staff and student perceptions of synchronous delivery

“Interaction is to life in the classroom what carbon is to DNA.” (Garrison & Vaughan, 2008, p. 25)

Of the student survey respondents, 47 out of 83 indicated that they had experienced the synchronous Adobe Connect meeting environment. Figure 5 shows the perceptions of these students related to their meeting experiences. With one exception (only 32% of students strongly agreed or agreed that meetings could have been more interactive) students rated their experiences very highly. The low rating related to responses concerning interactivity was difficult to evaluate because it required an understanding of just how interactive a student’s experience had been in the first instance and is therefore subjective. Upon reflection, the term ‘interaction’ was used in two ways within the survey and this may have caused confusion. It was used both to describe interaction between the student and the multimedia technology and also used to refer to the act of communicating with peers and staff.

It is also notable that in other questions within the survey, 83% of students indicated they felt completely or usually comfortable in the meeting environment and that 87% indicated that they were completely or usually comfortable asking questions in the online meetings.

Students were also asked to indicate their views on the functionality they experienced in the meeting environment. For each item that follows, only the responses of those students who had experienced the functionality is considered (i.e., responses of students who had not experienced the functionality were excluded from each calculation).

75% of students rated the use of PowerPoint slides as extremely useful or useful in the meeting environment, 73% of students rated the text chat tool extremely useful or useful, the video camera tool 68%, the use of video clips 71%, the whiteboard (that provides an opportunity to use rudimentary drawing tools on a virtual screen) 61%, screen sharing (sharing the live view of a participants computer screen with others) 68%, and the use of
Figure 5 – Student perceptions of their Adobe Connect experience
breakout rooms (participants being divided into groups and sent to virtual breakout rooms to collaborate before being brought back into the central meeting) was rated extremely useful or useful by 73% of students.

However there are two issues related to these statistics that need to be considered. First, on reflection, the survey failed to separate the use of live participant audio from live participant video within the meeting environment. This means that students were unable to indicate a preference for either audio only communication (for example, using a headset) or a video/audio combination that could be achieved with equipment such as a web camera. Secondly, of the 47 students who indicated they had participated in online meetings, most had not experienced all the items of the functionality described. So whilst the use of video cameras rated highly, 47% of student meeting attendees had not experienced them. This is the same for the use of video clips (49% of students did not experience this), the whiteboard tool (40%), screen sharing (60%), and breakout rooms (51%).

This suggests that whilst some staff made use of the advanced features of the Adobe Connect meeting environment, some did not. It also suggests that staff may have been selective in the tools they used within online meetings, but further investigation would be needed to determine the reasons for this, such as whether these were pedagogical decisions or due to staff competency with certain tools.

The high rating of PowerPoint and text chat by students, coupled with the fact that a high proportion of students experienced both, suggests that meetings mostly comprised a synchronous PowerPoint presentation given by staff to students. The researcher suspects that these meetings typically included audio (and not video) in the form of the staff member talking ‘live’ to the students based on anecdotal evidence, staff interviews and student responses elsewhere in the survey, but is unable to confirm this due to the failure to provide a separate ‘audio only’ question within the survey.

As seen in figure 5, 81% of students strongly agreed or agreed that the use of video and/or audio enhanced their learning, 72% strongly agreed or agreed that Adobe Connect enhanced their interaction with students and 83% indicated it enhanced their interaction with the lecturer.

The opportunity to hear comments made by the staff member and fellow students enhances discussion. Tone, expression and emphasis are aspects of communication missing in text-based discussions.

Voice communication has a clear influence on all aspects of learning performance. It enables learners to speak naturally, as in face-to-face communication. Learners can use filler, which indicates communication problems or is a sign of sentence construction, in voice-based CMC [Computer- Mediated Communication] much like they would in face-to-face communication. (Yamada, 2009, p. 831)

The ability to hold online synchronous meetings provides opportunities to increase teacher presence within the course, increase student social presence, communication and collaboration and provides scope to decrease the sense of isolation and therefore transactional distance experienced by distance education students.

Many concerns regarding distance education involve the simple lack of face-to-face contact. Web-conferencing–type discussion sessions serve to at least allow for real-time verbal interaction among students and faculty. Increasing dialogue between students and instructors effectively decreases transactional distance. (Pattillo, 2007, p. 111)
Schlosser and Burmese (2006, p. 2) support this, suggesting that:

…the ability to clarify concepts verbally with or without supplemental text is valued. Humans enjoy the sound of the human voice. The use of audio provides a high-touch learning material that builds a connection between instructor and students - and among students. Hearing an individual’s voice adds another dimension to an online identity.

As seen in Figure 5, 81% of students agreed or strongly agreed that the use of Adobe Connect enhanced the quality of the course, 79% agreed or strongly agreed that they would take another course with this technology used, and 79% would also recommend that other courses use the system. 81% of students indicated that they did or would download recordings of synchronous meetings when made available.

Whilst discussion forums and learning management systems can be used to build a sense of community and social presence, synchronous communication enhances this ability and provides a sense of immediacy in contact and communication. Students commented upon the advantages of such a system as follows:

“Adobe Connect was able to keep up with the conversations from each participant. There was minimal delay in transferring from one participant to another.”

“Live interaction with the tutor and other students outside of the static forum of the discussion boards.”

These views are also reflected in questions presented in both Figure 5 and Figure 6, where 68% of students agreed or strongly agreed that Adobe Connect helped develop a sense of community, and 74% agreed or strongly agreed that the online system improved or greatly improved building a sense of community respectively.

Staff saw the system as also having benefits in being able to respond immediately to student questions and the versatility that Adobe Connect provided:

“I like having Connect as the gateway to all the things on my computer. If I need to share a document, I just upload a document. If I need to demo a piece of software, I just share my screen. I’ve really enjoyed that type of flexibility.”

The spontaneity of the synchronous meetings was also reflected in the research conducted by Park and Bonk (2007b, p. 251) when they assessed Post-Graduate student’s views of the predecessor to Adobe Connect, known as Macromedia Breeze, but also commented on the usefulness of having more than one way to communicate within the environment:

The students in this study agreed that the spontaneous chances for follow-up questions and answers in the synchronous audio or text environment helped their understanding through addressing more contextual information about the presented context. Furthermore, they thought that the multiple channels of input were one of the main benefits of audio-based communication. That is, they were able to receive more information from seeing, hearing, and communicating with peers and instructors at the same time rather than passively sitting and reading from computer screen.

Dawson (2006, p. 160) assessed undergraduate and postgraduate students within a large Australian metropolitan university concerning their sense of community and found the importance of interaction to foster a social community, which lead to the development of a ‘learning community’:
Figure 6 – Student perceptions as to how the online meetings enhanced activities.
The data suggests that the frequency of communicative interactions undertaken by the student body positively impacts on the development of the social community experienced among the cohort. It is suggested that an enhanced social community has direct repercussions on the development of a learning community. The development of a classroom social presence (online and offline) stimulates the fostering of a functional ‘learning community’ among the student cohort.

Anderson and Garrison (1995, p. 188) see this social interaction “as essential in the development of communities of inquiry and critical thinking”, however it must also be acknowledged that synchronous discussions provide challenges for participants, making it difficult to “reflect in action and keep all the facts and ideas current” (Garrison & Vaughan, 2008, p. 37).

One staff member saw synchronous meetings as an opportunity to meet the needs of a specific group of students, but that the meetings didn’t necessarily benefit everyone. It should be noted that this staff member had decided to no longer have a ‘campus course’ (usually a 2-3 day on-campus course for distance students) in favour of running a shorter series of online meetings:

“There’s a lot of value that the students get with the sense of intimacy with the instructor. Not all of them need it. Not all of them are looking for it. Many of them have been ‘trained’ by the University to be quiet, silent, dedicated students with the study guide sitting on their desk. And they will probably continue to do that. But many, many have also felt that they haven’t been getting what they like to get…they haven’t been getting a similar or close experience [to internal delivery]. And with the demise of the campus course, this is just a brilliant way of dealing with those students who feel that they need that kind of contact.”

The meeting environment, the audio and text discussions, as well as functionality such as the breakout rooms also provided opportunities for students to share in the social construction of knowledge. One student described the benefit being “the interaction and expansion through the increased resource of the other students”.

A common theme from the student responses as the reason why they enjoyed the synchronous meetings, was the ability to participate in a meeting and to be present with both their peers and the staff member running the course:

“Just a great sense of inclusion in the course; connection with the tutor and other students; it is a fantastic addition to the extramural mode.”

“Real time discussion. Ability to ask questions of peers and tutor directly. Conversational interaction - social interaction.”

“Just the fact they were available. Without them there would have been no contact except via emails/discussion boards. Helps personalize the lecturer and other students.”

One staff member felt that “the students really enjoy being able to understand how the material is perceived by the other students. Whether some of their issues or concerns are shared by the others or not.”

A staff member spoke of their teaching style and their desire to interact with students in a live lecture, be it online or in a lecture theatre. This staff member emphasised the importance of this interaction both for the students and for the staff member themselves:
“One of the things that I discovered very quickly was that I enjoyed an interactive approach. I wanted students to interact with me and tried to develop different mechanisms for doing that.”

One staff member who used ‘clickers’ (or response systems) within campus-based lectures, had adopted and modified this approach to receive the same feedback from students by using the poll and quiz tools in the online Adobe Connect environment:

“I’ll constantly ask questions just to test their understanding. It’s quite instant to get a response from them.”

However at the same time, another staff member appreciated the limitations of the online meeting environment:

“I’m not making any claim that this is the same rich experience that you get in a live classroom, but by structuring it reasonable well, you’ve got yourself close to…well, it’s a different experience, that they [the online students] get a lot out of it”.

The ability to communicate via text chat is a default function within an Adobe Connect meeting environment. One staff member commented that using previous text chat systems (such as those within the WebCT Learning Management System) meant that directing conversation and focussing attention was difficult. A simple example they provided was that within WebCT, any text chat conversation would refer to a PowerPoint presentation that had either been looked at previously or was located elsewhere, whereas the text chat system within an Adobe Connect session actually referred to a PowerPoint that was present and visible as the participants discussed it.

Students reported a small number of issues that they experienced in online meetings. Examples included needing time to get familiar with the meeting environment or sound issues in meetings, both of the staff member’s audio or other participants. A student also commented on the time the meetings occurred because the student was not located within the same time zone as other class members, and one commented that their home environment was the main issue:

“My personal environment (kids running through, jug boiling, dog barking) - nothing that Massey can do about those real life things - I need to sort out my personal space better.”

Other comments from students showed a need to better explain the environment and the technology to them and that students hadn’t been fully informed of all functions in the room, including the ability to ‘lock’ the microphone open to allow the user to speak with their hands free:

“It was a nuisance trying to keep the TALK button pressed with my mouse and maintain dialogue at the same time.”

Aside from audio, the whiteboard tool was the function within Adobe Connect meetings that was most commented on related to technical issues. Students indicated that they felt it was limited and difficult to grasp the use of. Others felt that it could be useful, but that they hadn’t been shown how best to use it.

One student commented that being provided with some time to learn about the environment was needed before being asked to participate in online tutorials related to course content:
“Maybe an opportunity to have a 'play' in the connect environment prior to using it for [course] tutorials. A [course] tutorial is a difficult place to learn to use all the tools on offer and still be effective.”

Staff were aware of the technical challenges concerning being able to run their online meetings. However, they also compared the environment to how they had previously communicated with students and were therefore quite positive. They acknowledged that Adobe Connect was a technically challenging environment to work in, as well as one that also encouraged self-reflection about their teaching style:

“There is room for improvement, but actually that kind of incremental improvement comes from the observation of users. But the platform as a whole gives you a whole lot of tools and capabilities that are really important and well integrated.”

One staff member commented on the economic benefit, suggesting (as a staff member who usually had to travel overseas to present and run workshops) that the system allowed him to lower his carbon footprint. “It’s the ability to interact, to package lecture materials and different content, and have a robust platform that allows you to manage them, it is very important and is a great aspect of Connect.”

Student learning preferences and comments

In the final portion of the survey, all students (83 in total) were asked questions concerning their preferences in relation to the pre-recorded presentations and online meetings. Students commented on the usefulness of meeting recordings if they were unable to attend a live session, and others suggested that the degree to which a meeting and/or presentation was useful related to the content of the course and how well the technology suited what was being taught:

“I don't see pre-recorded presentations as being much of an addition to the text book and accompanying CDs. The spontaneous interaction of an online meeting is better/more useful for language study.”

“The course is very visual so pre prepared presentations would be useful. It also involves a lot of technical problem solving so being able to have a flexible meeting to address student questions / needs is also useful”.

Asked to specifically describe the advantages of live meetings compared to pre-recorded presentations, students made a number of comments:

“Live discussions help with critical thinking and advance an individuals understanding”

“Interactive learning, makes you do the readings and study the cases before you participate in the live discussions. Makes you relevant and can make you keep up with the pace of the course instead of doing it latter [sic].”

“Whakawhanaungatanga⁶ - opportunity to meet fellow students and paper co-ordinators. Allows for the sharing of information/resources on a personal level. Able to question/debate subjects or assignments.”

The disadvantages of online meetings that students identified mostly related to the need to be online at the same time:

“Interruptions by many questions from other users makes flow of presentation stilted, but still useful to see others questions”.

“Being part time extramural, I don't always have the time to meet online at prescribed times because of work commitments”.

Asked to indicate whether they would prefer pre-recorded presentations to online meetings, 53% of students indicated that they would prefer both. 17% indicated they would prefer synchronous meetings, 11% pre-recorded presentations, 2% neither and 17% of students did not respond.

Reasons given for preferring both included convenience and the added benefit of both modes of delivery:

“It provides the ultimate flexibility - I always try to make the live discussions but, when not possible (only 2x), I viewed the recorded one.”

“Could listen to the presentations in you own time and then have on line meetings once a week on that topic this would provide a greater understanding of all topics.”

Finding the right balance is going to be a challenge for the delivery of any course that employs these technologies. As one student put it, “Extramurals have other commitments and study needs to be flexible - that's why we are not at school fulltime”, however others clearly indicated the desire to participate, communicate and collaborate with their peers in synchronous meetings.

67% of students agreed or strongly agreed that the online meetings and/or presentations had improved their learning, 2% indicated that they had not, 4% were unsure and 27% did not answer the question. Student’s commented:

“Definitely - made me more enthusiastic for the course; also provided incentive to stick to the course timeline - complete the readings prior to the presentations”.

“Definitely. A sense of interaction and community. Communication is key to learning and this is an efficient form of it for extramural students. Deeper understanding that a textbook could ever have brought”.

“Yes absolutely. The interaction with the rest of the course participants was informative and you got to understand how the course was interacting within their worlds as well resulting in expanded understanding”.

Asked if they felt the presentations and/or meetings improved their grades, 41% of students said yes, 12% said no, 18% were unsure and 29% did not respond to the question.

Finally, students were asked if they had any additional comments. Some of the comments that are relevant for discussion in the final sections of this report are listed here:

“I think they are a fabulous opportunity and should be used as much as possible, but lecturers need to be equipped to cope with the differing environment. (It's not the same as talking to a class in a room)”.

“Just that it had some tech problems which held things up a little”.

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“Would love it in all my papers please. I’ve given up on the [name removed] dept extramurally as I am not clever enough to teach myself this - which seems to be what they expect. I did expect undergraduate tuition to be more than just a textbook and study guide - which I have experienced with some of the stage 2 and 3 papers I’ve completed”.

Technical issues and staff/student competency

Learners just starting online courses are preoccupied with functional and technical concerns, with getting started, with learning their way around a new medium. They are engaged in “forming and norming” activities, relying on external expertise for guidance and support. At this time, helpful instructors or helpful administrators can contribute positively to the well-being of learners with attention to details and shows of support. (Conrad, 2005, p. 11)

Whilst survey responses from students did not talk of technical issues sufficiently to cause concern, the advanced nature of the systems being used means that they are issues that still must be considered. At the time of writing, the Adobe Presenter and Adobe Connect systems are being centralised within the University the research was conducted in, but technical and pedagogical support for both staff and students has mostly been the responsibility of the researcher as an adjunct to his role. As one staff member stated when interviewed, “the biggest frustration for me has been that the University hasn’t supported this”.

Acknowledgement needs to be given to the technical issues and the response to the technologies (from both staff and students) and the impact that they can have on learning experiences, collaboration opportunities, learning outcomes and the data contained within this research project. One staff member addressed their ability to deal with technical issues by stating:

“There are a lot of things that over the years I have dealt with...and I don’t think I’ve dealt with them well.”

The technical competency of staff may also influence the experiences of the students in the use of these technologies, both in their ability to determine the affordances that the technologies provide, as well as the influence and restrictions that the systems will place on their delivery. “It is vital, therefore, for instructors to have solid knowledge and skill in various mediums available as well as an awareness of the appropriate pedagogies, challenges, and new roles for various types of synchronous and asynchronous environments” (Park & Bonk, 2007b, p. 260).

One student commented directly on the competency of a staff member as an influence on the student’s experience:

“I think that the effectiveness of Connect is probably significantly dependent on the lecturer's efforts. Congratulations to [Name Removed] for his excellent work and readiness to be an innovator. In comparison to another Massey [Programme removed] course I am also currently taking Connect has made this paper MUCH more enjoyable, profitable and memorable”.

Because of the synchronous nature of online meetings, technical issues become more noticeable and have greater impact, given that asynchronous material may be able to be viewed at a later date when issues are resolved. Park and Bonk (2007a, p. 312) also found student’s faced challenges despite positive outcomes to their research:
The findings of the interviews with the students indicated that they were satisfied with the synchronous activities in terms of the prompt feedback, meaningful interactions, and instructor’s appropriate supports. On the other hand, time constraints, a lack of reflection time, tool-related problems, and peers’ insufficient preparation in the necessary equipment and technology were identified as the main challenges.

It is vital to ensure that both staff and students have an understanding of the technologies, their capabilities as well as their flaws or limitations. Table 2 indicates the main issues that the research data has shown need to be considered. The mechanisms for this support can come from a variety of units within an institution, including IT support services, student support services and units focussed on the professional development of academic staff and associated support for their teaching.

The implications for supporting the issues shown in the Table 2 will be discussed in the section that follows.

<table>
<thead>
<tr>
<th>Technical</th>
<th>Teaching and Learning</th>
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<tr>
<td><strong>Student</strong></td>
<td><strong>Staff</strong></td>
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<tr>
<td>• Support to ensure computers technically capable</td>
<td>• Support to ensure students feel confident when participating</td>
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<td>• Instruction on how to resolve technical issues</td>
<td>• Support to provide effective practice for participation</td>
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<td></td>
<td>• Support to ensure staff feel confident in content creation and online participation</td>
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<td></td>
<td>• Support to provide effective practice for delivery, understanding of technology scope and technical boundaries that impact teaching</td>
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Table 2 – Technical and Teaching/Learning issues to consider

**Implications for learning and teaching**

In considering the implications for teaching and learning, it isn’t so much a question of which teaching approach is correct and which delivery technologies to employ to facilitate such a process. Instead, what is required is both an understanding of the affordances of the teaching methods described and of the strengths and weaknesses of the technologies to be deployed.

Kirkwood (2009, p. 113) argues that “teachers with a transmissive approach are more likely to use ICT applications and tools that support the presentation of information” and that “teachers with a facilitative approach will attempt to exploit ICT to promote the active engagement of learners and use communication tools that support dialogue to promote and develop understanding through discussion and collaboration”.

As one staff member commented:

“…you need to indentify your teaching style, identify how you are communicating the knowledge and match that to the tools; asking if they do match and what do I need to modify in my teaching style to make these tools and my style work.”
What is clearly evident from the responses of the students and in the interviews with staff is the need for both opportunities for transmissive teaching as well as facilitative teaching. The challenge is to determine when the most appropriate use of these approaches should occur and create a blended approach that supports the flexible and varied needs of students.

The data from the student survey supports the need to provide opportunities for both self-paced and time-dependent activities. In relation to presentations, 86% of students agreed or strongly agreed with the statement “The use of presentations fitted in with my study patterns and I felt in control of the pace of my learning”, however 55% of those same students then also indicated a desire to interact with others at the time of viewing presentations. In addition to students rating the experience in the meeting environment highly, including commenting on the immediacy to their peers and teaching staff, and the advantages of instant collaboration and communication, they also indicated that pre-recorded presentations helped build community and communication, including improving the depth of discussions within courses, suggesting these values are not the sole domain of live discussions.

Students overwhelmingly recommended the use of the technologies in teaching and learning, as well as stressing their enthusiasm toward them and the clarity of study that they provided. One distance student commented that the technologies “compliment each other perfectly” and related this, to the experience that internal students receive where they have “the ability to interact with their tutors”.

As noted earlier when discussing Garrison and Anderson’s ‘Community of Inquiry’ model, the ability to provide an environment in which students are able to construct meaning, where they are able to present themselves as ‘real people’ and that provides an opportunity for the teacher to be present and to facilitate discourse, is crucial. Such an environment supports the process of cognitive presence, “that encompasses states of puzzlement, information exchange, connection of ideas, creation of concepts, and the testing of the viability of solutions” (Garrison & Vaughan, 2008, p. 22).

Russo and Benson (2005, p. 60) in research that examined the relationship between perceptions of presence in an online class to affective and cognitive learning outcomes, found a “statistically significant relationship between students’ performance and their perceptions of their own presence” and commented that “establishing and supporting opportunities for students to establish both their own salience and provide social and material support in online classes, especially by working with the material together, offers important tools to enable heightened performance”.

However facilitating such an environment can be challenging for both students and staff alike. One student commented that what was needed was an improvement in “facilitation skills, student discipline for using the question facility for questions, not for funny comments or asides. Getting to the topic for the lecture and leading that”.

Arbaugh and Hwang (2006, p. 16) agree that time needs to be spent on preparation to ensure that interactions are purposeful, and that this preparation:

…has to be made clear even before participants get into the first virtual experience. This preparation is done through clarifying of rules and guidelines of virtual engagement, setting up boundaries on electronic group and class interaction websites, assigning roles to individuals in each session, requiring completion of assignments before and after sessions, and generally delineating boundaries and scope of virtual interactions.
Shea et al (2006, p. 185) place added emphasis on the role of the instructor, noting in their research across 35 institutions:

…that a strong and active presence on the part of the instructor - one in which she or he actively guides and orchestrates the discourse - is related both to students' sense of connectedness and learning. This does not discount the importance of good instructional design and organization. Students who reported more effective instructional design and organization also reported higher levels of learning community.

Another notable finding of the research is that there appeared to be little resistance to either the asynchronous or synchronous teaching activities on which the students were surveyed. Whilst students were prepared to indicate their preference, none questioned the need for either activity. Whilst few felt that such activities weren’t of benefit to them or that the time commitment was too great (synchronous meetings by their nature require ‘attendance’ at a set point in time) they indicated an appreciation as to the benefits of these approaches for others. Overwhelmingly, despite technical concerns expressed by some, staff and students were appreciative of the affordances that the technologies provided.

That is not to suggest that the technologies did not require effort by both the students participating in the activities and the staff developing content or hosting meetings. It must be acknowledged that the staff involved in the interviews were not only passionate about the opportunities that the technologies provided, but that they were willing to spend the time and effort needed to use them effectively in their teaching.

In the book *Blended Learning in Higher Education* (2008, p. 5), Garrison and Vaughan detail a vision and an approach to teaching in higher education that both acknowledges and attempts to meet the needs of the twenty-first century learner:

Blended learning is not an addition that simply builds another expensive educational layer. It represents a restructuring of class contact hours with the goal to enhance engagement and to extend access to Internet-based learning opportunities. Most important, blended learning is a fundamental redesign that transforms the structure of, and approach to, teaching and learning.

Such an approach as that described by Garrison and Vaughan may require a university to consider a rethinking of its teaching “whereby both face-to-face and online learning are made better by the presence of the other” (2008, p. 5). However such a rigid interpretation of the concept of blended learning may not cater for the needs of students within this research project.

The concept of blended learning could also be used to describe new opportunities in online delivery and that “at the heart of this argument is the quality and quantity of the interaction and the sense of engagement in a community of inquiry and learning, achieved through the effective integration of Internet communication technology” (Garrison & Kanuka, 2004, p. 97).

Providing opportunities for campus-based students to participate in online environments, both asynchronous and synchronous in nature, would provide further opportunities for discussion, collaboration and the shared construction of knowledge. For distance student, this online learning could also decrease their sense of transactional distance and may be a useful substitute for the lack of opportunity for true face-to-face delivery. This is clearly evident in the responses of the distance students within this research project, when their comments related to synchronous meetings were frequented with terms that on-campus students would take for granted, but were clearly missing previously in their own learning experiences: terms
such as connectivity, real time, instant conversations, live discussions, less ‘alone’, inclusiveness, spontaneity, immediacy.

Support and professional development

In order for students to operate effectively in an online classroom it is necessary for them to acquire some key virtual classroom competencies.

…However, trying to develop all of these skills in students’ first online lesson would not only detract from learning actual course content but would also place cognitive overload upon the students. Rather, a gradual and natural approach to developing virtual classroom competencies is recommended. (Bower, 2006, p. 4)

The staff interviewed agreed in some respects with the comments made by Bower. However, they also felt that it was beneficial to have an initial session with students to familiarise them with the online meeting environment. Despite comments from students about technical issues, the staff did not see the need for detailed training for students and therefore appear to mostly support Bower’s notion of a graduated approach to developing competencies. As one staff member commented, the first online meeting should be “mostly orientation…not just the meeting environment, but to the course”.

Whilst in some respect an introduction to the environment and to the course is best carried out by the academic staff member teaching, there are other preparatory activities that could be conducted by a technical or student support service within a university. Opportunities for this type of support have been limited within the University the research was conducted in, due to the failure of the university to centralise the service once the demand from students and staff became evident. It is therefore not surprising that staff, whilst positive of the support given so far, appreciated that additional support was required.

Professional development for academic staff requires staff gain a technical understanding of the online environment, as well as the development of a consistent approach within the University related to how online meetings are conducted. The development of an agreed ‘online etiquette’ would go towards creating a consistent experience for all students. As one staff member stated, “it’s an enormous leap for people who just use the computer for writing documents, email etc, to be live in a meeting with 57 students, running it…and being the subject expert…and, it’s a big ask”.

One staff member suggested that staff should undertake a “2 or 3 session introduction to running a meeting that takes people [staff] from not just opening a meeting but to running it live”. At the same time, consideration needs to be given to the subject domains utilising the technologies, the intended purpose of the asynchronous presentations and synchronous meetings, and how these best fit with the staff member’s teaching style. Kirkwood (2009, p. 117) states that it isn’t just about improving the technical familiarity and competence of staff to understand how to operate hardware and software, but that they also need to understand “why students’ learning and their effective use of technologies depend upon assessment requirements, and why teaching and assessment practices must be aligned and be supported by appropriate uses of technology”. Garrison and Vaughan (2008, p. 87) believe that “the technology of synchronous and asynchronous connectivity, sinuous with blended learning, may offer previously unimagined options. This potential, however, will not be realized without practical guidelines to inform design decisions”.

Other areas of professional development that staff commented on, included the need for exemplars of effective practice to be provided to staff both from within the university and outside, publicising innovative examples to encourage staff use, as well as opportunities for
staff to discuss use and important aspects of delivery with other staff. Many of these could be easily achieved through campus-based or virtual meetings/symposia, dedicated websites related to the use of the technology (such as a website exists within the university involved in this research project), mailing lists, the creation of a staff position responsible for (as one staff member commented) “evangelising” the opportunities these technologies provide, and an ongoing commitment by units within the university to support, promote and encourage the need for a blended approach that involves both asynchronous and synchronous opportunities for all students.

Returning to a discussion on the pedagogical decisions made related to the technologies in this project, each academic staff member will need to give consideration as to the appropriate time and use for them in their teaching. As seen in the interviews, staff had to some extent, defined the opportunities that the technology provided in their courses, with two staff using Adobe Presenter for the initial delivery of information to students and Adobe Connect for discussion, clarification and interaction; whereas another staff member used Adobe Connect as an online introduction (interestingly this staff member gave similar synchronous presentations to internal students first and described this casually as a “rehearsal” for the online meeting), discussion and interaction, and then used Adobe Presenter at the conclusion of a topic, to provide a concise presentation on the learning outcomes that had been achieved.

Both approaches are pedagogically sound and consider both the capabilities of the technologies and the needs of the students, however the approaches also clearly match with the academic’s teaching style. Thought should also be given to the level of engagement that staff require of students, including the commitment required by distance students (for example) being asked to participate in synchronous meetings in terms of the frequency of meetings, duration of meetings (staff reported their online meetings ranged from 1 to 3 hours), time (evenings will suit those working but not necessarily those with family commitments or overseas), day (one staff member ran meetings in weekends as opposed to weekdays) and the level of interaction that students will be asked to provide in a meeting. This then has an impact on the ability of students to participate, the technical requirements of staff and students, study workload, staff teaching hours and technical operation and support.

As Garrison and Kanuka (2004, p. 101) state, support therefore should be in the form of both human resources – “Individuals with instructional design, curriculum development, and technology skills are necessary to support teaching faculty new to blended learning” as well as “technical resources that are dependable and transparent are required to ensure that the technology can enhance the learning process - rather than obstruct it”.

**Research limitations and opportunities for future research**

There are a number of factors to be taken into account when considering the data contained within this report. Firstly, there were limitations to the size of the sample population by the fact that the technologies involved were not available across the entire University. This meant the staff interviewed whilst teaching in quite different subject areas, were members of only two of five Colleges within the University. Contact with students to invite them to participate in the survey required the willingness and involvement of teaching staff to forward on an email and some staff declined or did not email students until late in the survey period. Secondly, as this survey was conducted during the second semester of the University year, some students who were scheduled to participate in Adobe Connect meetings late in that semester had to be excluded.

It must also be acknowledged that the survey provided substantial rich data that could be further explored and analysed. Personal information provided by the student participants could allow for analysis of student preferences by subject area, gender, age and more. Such
analysis may prove to be useful in further determining student preferences related to the technologies, but was beyond the scope of this research project.

Additional to the limitations detailed, there is scope for ongoing opportunities related to research that was unable to be covered within this report. This includes further research into the effect of student perspectives on their study habits and performance. Nielsen and Levy’s research (1994, p. 72) concluded that “it is obvious that there is a positive association between the users' performance and their subjectively expressed preferences”. Additional research into the impact that the technologies discussed have upon student performance could also prove beneficial. More detailed discussions with staff over their use of synchronous meeting tools could examine the pedagogical decisions being made concerning the tools, the level of technical competency needed by staff and the impact that technical competency and teaching styles have on tool selection. Further exploration into the effectiveness of specific tools or their relevance for specific curriculum areas would also be a useful research path to consider, as would further research into the use of asynchronous communication tools (such as discussion forums) and their use in conjunction with either technology to support a community of inquiry.

**Conclusion and Recommendations**

The current challenge for administrators, policymakers, and faculty of higher education institutions is to acknowledge and accept that there have been significant and irreversible changes in societal demands, funding shortfalls, competition, technological innovations, and student demographics. As a result, there is a critical need to move creatively and assertively to confront and adapt to these changes. (Garrison & Kanuka, 2004, p. 102)

This research study focused specifically on student and staff perceptions of asynchronous and synchronous delivery, the implications for teaching, and the support and professional development opportunities needed.

We make decisions on a daily basis when it comes to approaches for effective communication. The results of the research show that we need to also make these decisions when it comes to enhancing our communication, collaboration, teaching and opportunities for learning. Thought needs to be given about which approach is most beneficial and when, as the research has shown that a single mode of delivery doesn’t appear to meet the needs of all students.

We need to make pedagogical decisions about effective asynchronous and synchronous teaching that take into consideration the needs of staff and students, their circumstance or decisions they made concerning whether to study on campus or at a distance. At the same time, the learning outcomes that are desired through the affordances that the technologies provide and the effective use and implementation of said technologies within a higher education institution should also be considered.

Student survey respondents supported a mix of asynchronous and synchronous learning opportunities in their study. Indeed criticisms of either one of the technologies often related to the characteristics present in the opposite delivery method – missing the opportunity to interact live with peers and staff when engaged in self-paced activities, or missing the flexibility of time when required to participate in synchronous events. This does not suggest that students are unsure of what they need in their learning, but as their feedback clearly indicated, are able to perceive the strengths and weaknesses of both forms of delivery for their study and appreciate the educational benefits of their use.
The results of this study showed that Adobe Presenter presentations were perceived by students as useful for providing self-paced material that was enhanced through the use of audio, video, quizzes and multimedia interactivity. These presentations were seen as being beneficial because of the information they were able to convey that text readings were not, including the tone, pace and language used by staff, including hearing foreign languages spoken for those studying this area. Staff also agreed that the presentation systems added a new dimension to their teaching that had previously been unavailable to them for synchronous teaching and used presentations both as introductory components of their course as well as for reinforcement, summarisation and clarification.

Adobe Connect meetings were seen as useful as a means of providing educational opportunities that students would miss by studying at a distance. These included opportunities for live presentations and discussion, interaction though quizzes and polls, student or guest staff presentations, screen sharing, small group discussions (through the use of breakout rooms) and meeting recordings for revision. These meetings created a sense of immediacy, increased the sense of community amongst students and were seen as contributing factors to improving dialogue amongst all course participants.

Overwhelmingly, students felt that both technologies should be used within their university courses, felt that Adobe Connect and Adobe Presenter enhanced and improved their learning and possibly contributed to improved grades.

Staff were also appreciative of the pedagogical benefits that both approaches provided, and their responses indicated the need for a university deploying such technology to ensure effective support mechanisms be put in place for students and staff alike. In the case of staff, strong emphasis needs to be placed in exploring how these technologies relate to teaching and can be used effectively to develop a community of inquiry, support communication, collaboration and discussion.

The results of the student survey and staff interviews show that at the university in the study, the move by staff to a blended model of delivery that provided both asynchronous and synchronous opportunities for discussion, debate, engagement and learning was positively received. Regardless of whether a student is a campus-based student or one who, by choice or circumstance, is studying at a distance, the university needs to take such measures to provide as rich and as engaging a community of learning as possible.

The value of the institution to ensure adequate support for both staff and students employing these technologies in teaching and learning is highlighted in this study. In this regard, Park and Bonk (2007a, pp. 319-320) suggest three areas to focus on when providing effective online teaching and learning opportunities:

1. Prepare students for synchronous learning
   a. Clarify technology requirements
   b. Explain task purpose
   c. Schedule practice sessions
   d. Be flexible
2. Promote active and meaningful interactions
   a. Scaffold students’ discussion
   b. Create a social climate
   c. Provide materials to be discussed
   d. Facilitate a small-group based discussion
3. Provide faculty with planned supports
   a. Provide technology options
   b. Offer faculty professional development
   c. Provide new incentive programs

Providing technical support to students and staff, introductory sessions to students engaging in synchronous meetings, as well as professional development opportunities on the effective use of asynchronous presentations and synchronous meetings was found to be crucial in this study. A combination of technical support, student support and staff professional development units is recommended, as well as staff with a passion, expertise and vision in the effective use of these systems to promote and encourage their use.

At the same time, strategic policies and planning should be established to support the approaches being taken. Operational resources, and resources for the support of staff and students should be provided. It is crucial that the university not only encourages the use of the technologies discussed in this research report, but that they are seen to embrace and commit to the unique and crucial role that they will play in the delivery of courses within the institution. It is the opportunities and affordances that these technologies provide to enrich learning and teaching that should be embraced.

Proactive implementation of emerging technologies is dependent on comfort level, monetary resources, and visionary leadership. Educational institutions must reflect on how their distance education program currently utilizes technology and how new, cutting-edge computer-mediated communications (CMC) may enhance the learning experience for students. (Beldarrain, 2006, p. 144)

As indicated, putting such structures and supports in place will continue to build upon and create the exceptional learning experiences that those who participated in this research have engaged in already, and wish to continue engaging with in future teaching and learning.
References


Corbeil, J. R. (2006). The (r)evolution of synchronous communication in Distance Education. *Issues in Information Systems VII*(1), 5.


Appendices

Appendix 1 – Survey invitation to students

Subject: Student survey - online meetings and presentations

Hi there,

You are receiving this email from a staff member who has provided online meetings or pre-prepared presentations to you in a paper this year. I would appreciate if you would be willing to complete a short (10-15 minute) online survey about your experiences.

This survey is part of my research project for my Master of Education (Distance and Online Education). The survey is completely anonymous and is being forwarded to you to ensure anonymity. You are under no obligation to answer any questions that you don't want to.

The survey can be accessed via the link – [link removed as it is no longer functional]

The survey closes at 5pm (NZT) on Saturday, October 17 2009.

Whilst the survey system indicates there are 38 questions in total, the survey 'branches' and may exclude many questions that are not relevant to you based upon your responses within parts of the survey.

If you have any questions about the survey, please don't hesitate to get in touch. Thank you in advance for taking the time to complete the survey and to support my study.

Cheers,

Phil

Flexible Learning and Teaching Manager
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Adobe Education Leader
Flexible Learning Leader in New Zealand

************************************************************************************************
Appendix 2 – Online student survey

Main (opening) screen of student survey

Adobe Connect and Adobe Presenter - Student perspectives

You have had the opportunity to view presentations or participate online using the Adobe Connect and Adobe Presenter system during the course of your study this year.

As part of my research project to complete my Master of Education degree, I would like to ask you some questions in order to gain an understanding of the experiences of those who participated in their use.

This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named below are responsible for the ethical conduct of this research.

If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher(s), please contact Professor Sylvia Rumball, Assistant to the Vice-Chancellor (Research Ethics), telephone 06 350 5249, email humanethics@massey.ac.nz.

To participate in the survey, please click on button marked "next>>>" below to begin. If you don't wish to take part, simply close your web browser.

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 survey immediately by closing your web browser or clicking on "[Exit and Clear Survey]"
• Ask any questions about the study at any time by contacting the staff involved
• Provide information on the understanding that your participation is anonymous

The survey should only take approximately 10-15 minutes and the questions asked to you may be shorter than the number of questions indicated below if you have not experienced both online meetings and presentations.

Thank you for your time, consideration and willingness to complete this short survey. Please only complete the survey once.

The survey closes at 5pm (NZT) on Saturday, October 17 2009.

There are 38 questions in this survey
Part 1 – Setting the Scene

Q1.01 - Please indicate the main subject area of your study (i.e., your degree and major)

Q1.02 - Please indicate your year of study

• First year
• Second year
• Third year
• Fourth year
• Fifth year
• Sixth or greater year
• No answer

Q1.03 - Are you a full-time or part-time student?

• Full-time
• Part-time
• No answer

Q1.04 - Please indicate the age range you are in:

• Up to 19 years old
• 20 – 27 years old
• 28 – 35 years old
• 36 - 43 years old
• 44 – 51 years old
• 52 – 59 years old
• 60 – 67 years old
• 68 years or older
• No answer

Q1.05 - Please indicate your gender

• Female
• Male
• No answer

Q1.06 - What is the main mode of delivery for the papers you are studying this year?

• Extramural
• Internal
• Block
• No answer

Q1.07 - Which mode of delivery, do you prefer, and why?

• Extramural
• Internal
• Block
• No answer
Q1.08 - How capable a computer user do you consider yourself?

- Expert
- Very capable
- Capable
- Not very capable
- Novice
- No answer

**Part 2 – Adobe Presenter use**

Q2.01 - Did you experience Adobe Presenter presentations during the course of your study? Please note - Adobe Presenter is *not* the online meeting environment that allows you to meet online with others.

Adobe Presenter presentations are enhanced version of PowerPoint files that have had audio, video, quizzes and/or attachments added. These are then made available to you either as a link to let you view the presentation online, sent to you as file or PDF that you could view, can be distributed on CD or made available within Stream or WebCT.

Adobe Presenter presentations can be viewed at any time and do not require the involvement of anyone else other than the person viewing the presentation. Some examples of Presenter presentations can be seen below.

- Yes (moves to Part 3)
- No (Moves to Part 4)
Part 3 – Your experiences with Adobe Presenter

Q3.01 - Could you please use the following scale to rate the usefulness of the features you experienced with the presentations. Please select "Did not experience" if you didn't experience any of the features mentioned.

- The use of audio to enhance a presentation
- The inclusion of video clips excluding those of the presenter
- Video clips showing the presenter
- The inclusion of a text 'script' of what was being said
- Animations within the presentation slides
- Items on the presentation slides you had to interact with excluding quizzes
- Attachments that could be downloaded from the presentation
- Quizzes that were part of the presentation

Scale:

- Extremely Useful
- Useful
- Acceptable
- Not useful
- Not useful at all
- Did not experience
- No answer

Q3.02 - What advantages do you see in a pre-recorded presentation compared to a live lecture that you attend?

Q3.03 - What disadvantages do you see in a pre-recorded presentation compared to a live lecture that you attend?

Q3.04 - What advantages do you see in a pre-recorded presentation compared to a standard text reading (e.g., study guide reading, chapter in textbook etc)?

Q3.05 - What disadvantages do you see in a pre-recorded presentation compared to a standard text reading (e.g., study guide reading, chapter in textbook etc)?

Q3.06 - Do you prefer the ability to watch these presentations in your own time, or would you (if given a choice) prefer to be online with your lecturer, as they talk through the slides, allowing you to interact with them and ask questions? And why?

- In my own time
- Live online with the lecturer
- No answer

Q3.07 - Would you like to have the ability to download and keep these presentations for viewing later?

- Yes – in fact I was able to do that in most instances
- Yes – if that functionality was available later I would
- No – I had that option but didn’t download presentations
- No – I wouldn’t feel the need to download and keep them
- No answer

Q3.08 - Would you please indicate how much you agree or disagree with the following statements...

- I learned to view presentations quickly
- I enjoyed the interactivity of presentations, including being able to control their playing
- The use of audio and/or video in presentations enhanced my learning experience
- I would have liked presentations to have allowed me to interact with others at the same time
- The use of the presentation enhanced the quality of the course
- The use of presentations suited my learning style
- The use of presentations fitted in with my study patterns and I felt in control of the pace of my learning
- The presentations were of good duration and pace

Scale:
- Strongly Agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Strongly Disagree
- No answer

Q3.09 - Please use the following scale to determine how much you feel the prepared presentations enhanced the following activities:

- Helped build a sense of community within the course
- Supported Peer-to-peer communication
- Supported Peer-to-lecturer communication
- Your enthusiasm for study
- Clarity of study
- Depth of discussion
- Spontaneity of discussion
- Your time management of study
- Helped enhance discussions that took place elsewhere (such as within a discussion forum or live meeting)

Scale:
- Greatly improved
- Somewhat improved
- No impact
- Somewhat disadvantaged
- Greatly disadvantaged
- No answer

Q3.10 - What did you like most about the prepared presentations?
Q3.11 - What did you like least about the prepared presentations?
Q3.12 - What aspect of the presentations do you feel need to be improved the most?
Part 4 – Adobe Connect meeting use

Q4.01 - Did you experience Adobe Connect meetings during the course of your study? Adobe Connect meetings are online 'web conferencing' meetings that you typically attend live at an appointed time. However it is possible to view recordings of meetings at a later date. Adobe Connect meetings take place online. You are provided with a web link to access the live meeting environment. Once in the meeting environment, there is an opportunity to chat via a text interface, listen to a live presenter, respond via audio, share PowerPoint files, participate in polls, as well as communicate via web cameras. Some examples of Connect meetings can be seen in the image below.

- Yes (moves to Part 5)
- No (moves to Part 6)

Part 5 – Your experiences with Adobe Connect online meetings

Q5.01 - Could you please use the following scale to rate the usefulness of the tools you experienced during the semester. Please select "Did not experience" if you didn't experience any of the tools mentioned.

- A PowerPoint presentation in a meeting room (possibly with audio and/or video
- Text chat
- Video communication tools (web cameras)
- Video clips played in the meeting
- Online Whiteboard tool
- Sharing computer screens or viewing/controlling a computer application
- Sharing files (such as Word or PDF files that you could upload or download)
• Voting, Poll or Quiz tool
• Break Out rooms (being sent to a separate discussion area)
• Mind Map tool

Scale:

• Extremely Useful
• Useful
• Acceptable
• Not useful
• Not useful at all
• Did not experience
• No answer

Q5.02 - Would you please indicate how much you agree or disagree with the following statements...

• I enjoyed interacting within the Connect meeting environment
• I felt comfortable communicating and asking questions using the web-conferencing system
• The use of audio and/or video in meetings enhanced my learning experience
• I would have liked meetings to have been more interactive
• The Connect meeting environment enhanced my interaction with other students in the course
• The Connect meeting environment enhanced my interaction with the paper coordinator
• The use of the Connect environment enhanced the quality of the course
• Meetings helped develop a sense of community
• I would take another course that used this technology
• I would recommend courses that choose to use this technology

Scale:

• Strongly Agree
• Agree
• Neither Agree nor Disagree
• Disagree
• Strongly Disagree
• No answer

Q5.03 - Would you like to have the ability to download a recording of a meeting for viewing later?

• Yes – in fact I was able to do that in most instances
• Yes – if that functionality was available later I would
• No – I had that option but didn’t download meeting recordings
• No – I wouldn’t feel the need to download and keep them
• No answer

Q5.04 - Please use the following scale to determine how much you feel the online meetings enhanced the following activities:

• To build a sense of community
• Peer-to-peer communication
• Peer-to-lecturer communication
• Enthusiasm for study
• Clarity of study
• Depth of discussion
• Spontaneity of discussion
• Time management of study
• Helped enhance discussions that took place elsewhere (such as within a discussion forum)

Scale:

• Greatly improved
• Somewhat improved
• No impact
• Somewhat disadvantaged
• Greatly disadvantaged
• No answer

Q5.05 - How comfortable did you feel being a part of online meetings?

• I was completely comfortable
• I was usually comfortable
• I was neither comfortable or uncomfortable
• I was sometimes uncomfortable
• I was very uncomfortable
• No answer

Q5.06 - How comfortable did you feel contributing/communicating within online meetings?

• I was completely comfortable
• I was usually comfortable
• I was not comfortable or uncomfortable
• I was sometimes uncomfortable
• I was very uncomfortable
• I didn’t contribute or communicate in any way
• No answer

Q5.07 - What did you like most about the online meetings?

Q5.08 - What did you like least about the online meetings?

Q5.09 - What aspect of the online meetings do you feel needs to be improved the most?
Part 6 – Final comments

Q6.01 - What advantages/benefits do you see in live discussions versus pre-prepared presentations that you can view in your own time?

Q6.02 - What disadvantages do you see in live discussions versus pre-prepared presentations that you can view in your own time?

Q6.03 - Which would you prefer to be made available to you for your study?

Q6.04 - Please explain your response to the previous question.

Q6.05 - Do you believe that the use of presentations and/or meetings improved your learning? Why?

Q6.06 - Do you believe that the use of presentations and/or meetings improved (or will improve) your grades? Why?

Q6.07 - Are there any additional comments you would like to make about your experience with Adobe Connect meetings or Adobe Presenter?
Appendix 3 – Interview consent form and questions

Connectedness – Student and staff perceptions of synchronous and asynchronous delivery in distance education

You have had the opportunity to deliver courses to students using the Adobe Connect and Adobe Presenter system this year.

I would like to ask you some questions, in order to gain an understanding of the experiences you had in using these technologies as part of your teaching. Specifically, I am interested in the use of synchronous and asynchronous tools to support flexible learning and teaching. I welcome your views in order to make this a worthwhile evaluation.

This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University’s Human Ethics Committees. The researcher(s) named below are responsible for the ethical conduct of this research.

If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher(s), please contact Professor Sylvia Rumball, Assistant to the Vice-Chancellor (Research Ethics), telephone 06 350 5249, email humanethics@massey.ac.nz.

The process I intend to use will be as follows:
- A recorded interview of approximately one hour in length will take place
- A transcription of the interview will NOT be made
- Instead, I will take notes from the recordings and any quotes that I am contemplating using after the interview has occurred. I will type these up and provide them to you for review. If you feel that any of my notes are inaccurate or there is a quote that you do not wished used, then this will be an opportunity for you to revise them and approve the content of that document. Only content from that document will be used within my final report.
- Recordings and consent forms will be retained by me in an encrypted form for the period required by the Ethics Committee
- Whilst I may ask some opening questions about your background in the interview, and because you are known to me due to our working relationship, I want to assure you that no information or content from our interview that can identify you, will be used in the final report.
- I will provide you with a copy of the questions asked at the end of the interview. These questions will form the basis of the discussion, but other questions may be spontaneously asked also.

Yours sincerely,
Philip Roy (p.m.roy@massey.ac.nz)

Note – This survey is part of my research project to complete a Master of Education degree and not a Massey University evaluation.
Connectedness – Student and staff perceptions of synchronous and asynchronous delivery in distance education

PARTICIPANT CONSENT FORM - INDIVIDUAL

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

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

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

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

Signature:  

Date:  

Full Name - printed
Questions

1. Can you give me some background related to your qualifications and teaching experience, and specifically, to teaching extramural papers?
2. Can you describe the papers that you teach (or have taught this year) extramurally?
   a. Are they taught internally also?
   b. What are the approximate sizes of the class?
   c. Are you aware of the geographic spread of your students (i.e., do you have many students enrolled and studying from overseas)?
   d. How long have you been teaching this paper?
3. What were the reasons for the development and design of this paper?
4. What aspects of the paper were/are challenging to teach to an extramural student? How did you overcome these challenges?
5. What have been the methods of contact traditionally for these papers? (Question the use of each method...i.e., telephone, WebCT, mailing lists, contact courses etc)
6. Do you feel the approaches you have used, provided enough opportunities to effectively teach the papers?
7. Have you ever used any method to provide presentations to your extramural students in a course, and why?
8. Did you use any of the following in your presentations? Why did you use them and how useful were they?
   a. Audio to enhance a presentation
   b. Video clips (excluding those showing the presenter talking)
   c. Video clips of the presenter talking
   d. A text 'script' of what was being said
   e. Animations within the presentation slides
   f. Items on the presentation slides students had to interact with
   g. Attachments that could be downloaded from the presentation
   h. Quizzes that were part of the presentation
9. To what extent do you feel a pre-recorded presentation such as the ones we have just discussed, compare to a live lecture that a student could attend? What do you see as the benefits and disadvantages?
10. To what extent do you feel the presentations are beneficial in comparison to a standard text reading? What do you see as the benefits and disadvantages?
11. What do you feel was missing from the presentations?
12. What benefits do you see in the use of the Adobe Presenter presentations?
13. What instructional value did you see in an asynchronous approach?
14. What challenges do you see in this approach?
15. Are you running online meetings? How are you using the meeting environment?
16. Did you use any of the following in your meetings and how useful were they?
   a. A PowerPoint presentation
   b. Text chat
   c. Video communication tools (web cameras)
   d. Video clips played in the meeting
   e. Online Whiteboard tool
   f. Sharing computer screens or viewing/controlling a computer application
   g. Sharing files (such as Word or PDF files that you could upload)
   h. Voting, Poll or Quiz tool
   i. Break Out rooms
   j. Mind Map tool
   k. Recording of meetings for viewing later
17. What instructional value did you see in using synchronous activities (previously and now)?
18. Did you have any difficulties in the use of this method?
19. What strategies did you use to facilitate meaningful discussion?
20. What suggestions would you make to improve synchronous use and engagement with students?
21. Do you see a greater benefit in synchronous or asynchronous communication? Why and what do you feel these two approaches offer?
22. Do you feel that there are times that a synchronous approach is more beneficial? And an asynchronous approach?
23. How confident did you feel in using these technologies?
24. Did you feel comfortable with your instruction to students on their use?
25. What professional development opportunities do you feel you need to improve your skills?
26. What responses or feedback have you received from your students?
27. Looking towards your continued delivery of this or other courses, are you likely to continue using these technologies? If so, what might you change or improve? If not, why?
28. Are there any additional comments you would like to make about your experience with Adobe Connect meetings or Adobe Presenter, or with the questions that I’ve asked you?
Appendix 4 – Low Risk Notifications

2 April 2009

Mr Philip Roy

Dear Philip

Re: Connectedness – Distance Students’ Perceptions of Synchronous and Asynchronous Teaching

Thank you for your Low Risk Notification which was received on 31 March 2009.

Your project has been recorded on the Low Risk Database which is reported in the Annual Report of the Massey University Human Ethics Committees.

The low risk notification for this project is valid for a maximum of three years.

Please notify me if situations subsequently occur which cause you to reconsider your initial ethical analysis that it is safe to proceed without approval by one of the University’s Human Ethics Committees.

Please note that travel undertaken by students must be approved by the supervisor and the relevant Pro Vice-Chancellor and be in accordance with the Policy and Procedures for Course-Related Student Travel Overseas. In addition, the supervisor must advise the University’s Insurance Officer.

A reminder to include the following statement on all public documents:

“This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University’s Human Ethics Committees. The researcher(s) named above are responsible for the ethical conduct of this research.

If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher(s), please contact Professor Sylvia Rumball, Assistant to the Vice-Chancellor (Research Ethics), telephone 06 350 5349, e-mail humanethics@massey.ac.nz.”

Please note that if a sponsoring organisation, funding authority or a journal in which you wish to publish requires evidence of committee approval (with an approval number), you will have to provide a full application to one of the University’s Human Ethics Committees. You should also note that such an approval can only be provided prior to the commencement of the research.

Yours sincerely

Sylvia V Rumball (Professor)
Chair, Human Ethics Chairs’ Committee and
Assistant to the Vice-Chancellor (Research Ethics)

cc

Dr Mundia Mentsi
School of Education
Albany

Ms Roseanne MacGillivray
Graduate School of Education
PN900

Assoc Prof Helen Southwood, Acting HoS
School of Education
Albany

Massey University Human Ethics Committee
Accredited by the Health Research Council
2 April 2009

Mr Philip Roy

Dear Philip

Re: Connectedness – Staff Perceptions of Synchronous and Asynchronous Teaching

Thank you for your Low Risk Notification which was received on 31 March 2009.

Your project has been recorded on the Low Risk Database which is reported in the Annual Report of the Massey University Human Ethics Committees.

The low risk notification for this project is valid for a maximum of three years.

Please notify me if situations subsequently occur which cause you to reconsider your initial ethical analysis that it is safe to proceed without approval by one of the University’s Human Ethics Committees.

Please note that travel undertaken by students must be approved by the supervisor and the relevant Pro Vice-Chancellor and be in accordance with the Policy and Procedures for Course-Related Student Travel Overseas. In addition, the supervisor must advise the University’s Insurance Officer.

A reminder to include the following statement on all public documents:

“This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University’s Human Ethics Committees. The researcher(s) named above are responsible for the ethical conduct of this research.

If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher(s), please contact Professor Sylvia Rumball, Assistant to the Vice-Chancellor (Research Ethics), telephone 06 350 5249, e-mail humanethics@massey.ac.nz.”

Please note that if a sponsoring organisation, funding authority or a journal in which you wish to publish requires evidence of committee approval (with an approval number), you will have to provide a full application to one of the University’s Human Ethics Committees. You should also note that such an approval can only be provided prior to the commencement of the research.

Yours sincerely

Sylvia V Rumball (Professor)
Chair, Human Ethics Chairs’ Committee and
Assistant to the Vice-Chancellor (Research Ethics)

cc Dr Mandla Mento
School of Education
Albany

Assoc Prof Helen Southwood, Acting HoS
School of Education
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Massey University Human Ethics Committee
Accredited by the Health Research Council