

gxLearning, teaching to geographically extended classes

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ABSTRACT

As internet based technology improves there is an opportunity to leverage this technology to cater for the diverse needs of students in a tertiary environment. Higher internet speeds allow the transmission of video and screen capture technology enables classes to be delivered in real time to students in multiple locations simultaneously.

In this paper the use of two technologies; video conferencing and webinar are considered and their use looked at in geographically extended classes (gxLearning), that is, where a traditional face to face class has students locally and in remote locations.

Both technologies proved to be well received by students, and the key issues were technological, which are solvable

Categories and Subject Descriptors

K.3.1 [Computers and Education]: Computer Uses in Education – collaborative learning, computer-assisted instruction (CAI), computer-managed instruction (CMI), distance learning.

General Terms

Human Factors

Keywords

gxLearning, Geographically extended classroom, webinar, Adobe Connect, Video conferencing, face-to-face teaching, blended learning.

1. INTRODUCTION

As students become more diverse in their modes of learning and the technology allows them to view classes in real time using video conference or web based technologies, there is a need to explore ways to increase the pathways that lecturers can deliver and students can learn on. In particular, students may be in a variety of geographically separated locations and wish to participate in “live” classes. With disruption of delivery caused by natural events, such as earthquakes, creating a heightened awareness, this research also becomes important to assist in preparing for possible future recurrences.

The purpose of this paper is to describe and compare two methods of teaching to geographically extended classes, where students may synchronously attend physical classes in a variety of locations. We have coined the term “gxLearning” to indicate “a geographically distributed class, consisting of students in a face-to-face mode plus students in a remote location”. The first uses video conferencing techniques to deliver a class live to two geographically separated campuses, and the second uses webinar software (Adobe Connect) to allow students enrolled on the primary campus to participate in classes when they are physically off campus using a browser and broadband connection.

This study asks the following questions:

1. What are the benefits that these technologies (video conferencing and webinars) deliver to students and educators?
2. What are the issues and disadvantages of using these technologies to deliver courses of learning?
3. What have we learnt from teaching with these technologies, and can these lessons be applied in a wider context?

The work presented will be of interest to institutions looking at delivering classes to a variety of campuses simultaneously, where students are unable to attend classes (for example after the Christchurch earthquake), where students are away for medical or employment reasons, or they may be in a different geographical location.

2. BRIEF LITERATURE REVIEW

In 2005 Nelson-Malborough Institute of Technology (NMIT), successfully used “interactive video conferencing” (IVC) to deliver distance classes between their main campus and another 2 hours drive away, and in the following year six papers were delivered using this technology [7]. Inglis [7] discusses in detail the background and advantages of IVC and indicated that the likelihood of IVC success depends on the educator feeling comfortable with the technology and that the courses need to be

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designed to effectively make use of the technology (Amirian cited by Inglis [7]). Further, Inglis indicated that NMIT “employed a coordinator at the remote location to ensure that the information reaches the students, a surrogate teacher role”. On a cautionary note Inglis identified that “users of the technology need to be aware that IVC is only a tool and does not make up for the deficiencies in teaching practice, in fact it can actually enhance these deficiencies” [7].

Internet browser web conference (webinar) products allow an educator to make a presentation and facilitate a discussion using a web browser, an internet connection, a microphone headset, or a web camera. The training presentation can be conducted as a synchronous online session and a presentation can be recorded and archived for later viewing. Products in this range are Adobe Connect, Wimba Classroom, Microsoft Live Meeting [9], and the recently released Google Hangouts.

Fletcher [6] identified the following benefits of using web conferencing in a classroom – in her case using Wimba - as: saving time and money, ability to train multiple campuses simultaneously, faculty can attend from home or office, just in time training possible, model the use of new technology. Challenges included: time constraints, technical issues, loss of hands on work, less interactivity, and lack of feedback for the trainer. As for Video conferencing software she suggested it was important to learn to use the web conference tools and be well prepared. This is backed up by Bovell [3] who suggests three major factors that contribute to making a high quality webinar: technology, content, and style (the way you present e.g. highlighting and annotation). There are many articles on running effective webinars [2,3,5], however most cover instances that do not include merging face-to-face with geographically separated.

3. RESEARCH METHODOLOGY

This project uses a case study research methodology [10], and an Action Research Methodology [4] to explore the effectiveness, advantages and disadvantages of two methods for enabling learning in a geographically extended classroom.

4. RESEARCH DESIGN / METHOD

4.1.1 Video conferencing

The Video conferencing technology arose from a need to deliver face to face or blended classes across two geographically separated campuses with the same lecturer following the amalgamation of two institutes.

Video Conferencing technology was installed in the classrooms at both campuses. At the main campus a variety of technology setups were installed in various rooms. In one room, two 55 inch Televisions were installed (Figure 1.1 to the immediate right of the lecturer) an electronic Smart Board and two projectors (one for the Smart Board and one to project the remote class on the side wall). Another room was set up as a simple meeting room, with one large screen, camera and microphone. At the remote campus two televisions were installed either side of the white board showing the lecturer on the right and the contents of the lecturer’s screen on the left (Figure 1.2).

Blended teaching methods were developed. The lecturer on the main campus was supported by a tutor on the remote campus, as suggested by Inglis [7], who attended the video-conferenced lecture sessions and ran tutorials. Moodle was used to provide enhanced learning activities and resources which were used by students on both campuses in tutorials and for self-directed study.



Figure 1.1 Video conference showing multiple screens and projectors at main campus.



Figure 1.2 Video conference showing multiple screens and projectors at remote campus.

4.1.2 Webinar

The use of webinar software arose from a need to deliver a third year degree paper to a student in the same remote location as the video conference. However as this paper was not on the list of “targeted” combined courses the video conferencing option was not available, and as only one student was involved it would have been considered “over-kill”. The paper was delivered in a blended mode, were a Moodle environment was used to provide direction and a distribution mechanism for course related materials such as outlines and assessment requirements. An externally hosted wiki was used to deliver the course content and was considered an appropriate format for a paper on Digital Learning technologies as it provides a real example of Open Education Resources.

With the amalgamation, resources were made available to improve the IT infrastructure and high speed internet was included in the mix. Adobe Connect [1] was suggested by a member of the institute’s technology in learning and teaching team (TiLT), who look after developing and supporting eLearning. The hardware and software requirements were minimal requiring only a web-cam (with a microphone) and a web browser. Testing prior to the first class delivery indicated that the web camera’s microphone had sufficient range to pick up the lecturer’s voice from up to 3 meters away, which was enough range to move from sitting behind the computer to working on the whiteboard in front of the class.

A photo of a teaching session in progress is shown in Figure 2. Further discussion is included under lecturer observations later in the paper.



Figure 2 Adobe Connect in a class session showing Smart Board and projector at main campus.

4.1.3 Survey design

In order to gauge the effectiveness of the two technologies and to answer the two research questions posed in this paper namely:

1. What are the benefits that these technologies (video conferencing and webinars) deliver to students and educators?
2. What are the issues and disadvantages of using these technologies to deliver courses of learning?

a generic survey was constructed. Care was taken to protect the privacy of the students particularly as the researchers were aware of the small sample size.

Questions were grouped into three categories: overall use and benefits, personal experiences and demographic information. A Likert scale ranging from 1-5 was presented and the respondents were generally given the opportunity to provide unstructured comments.

A copy of the survey questions is included at the end of this paper.

5. FINDINGS, ANALYSIS AND DISCUSSION

5.1 Survey results

An online survey was constructed and students were invited to complete it. Due to the small class sizes, the number of responses was low, but the participation rate was high - 3 out of 5 (60%) Video Conferencing students and 8 out of 16 (50%) webinar students completed the survey.

5.1.1 Video conferencing

All video conferencing (VC) students had some prior of tertiary education and all were either proficient (happy to provide assistance to others) or expert (can create software, would be considered a power user) in their level of computer confidence. For work experience 67% (2) had 0-4 years, and 1 had 10 years or more.

Survey participants were asked to rate the overall experience with the technology from Awful (1) to Great(5). One respondent rated the technology Good(4) and 2 (67%) rated this technology as Great(5).

In the case of VC, campus to campus was the only connection option, and sessions were not recorded so related questions were not completed by VC respondents.

As one respondent pointed out "*Video conferencing is an inherent feature of doing the BCS in Gisborne*". Benefits of attending classes at a different institution were listed as:

- "*.. better quality teaching that what is offered here in Gisborne*".
- "*I could continue to live at home in Gisborne instead of moving to Napier. This was a big saving in accommodation costs*"

In discussions with students they reported the main advantage of the video conferencing technology was that they could take courses that would otherwise not be available to them in their region.

When considering the actual experiences for students, all were positive about their experiences and identified some minor disadvantages including:

- have to physically "*attend a tutorial*" and access to the tutor was in "*real-time*".

Respondents were asked to compare the technology to face-to-face delivery. While one pointed out that there is a "*lack of intimacy between the student/class*", another indicated it was "*basically exactly the same*"

5.1.2 Webinar

For the webinar 63% (5) were female, (interestingly all the females answered the survey), and were evenly distributed across ages ranging from 20-40+. All had had some form of tertiary education (which is expected as this was a third year paper) and all were either confident (can manage files, use the internet and a variety of applications) or proficient (happy to provide assistance to others) in their level of computer confidence. For work experience 50% (4) had 0-4 years, 2 (25%) 5-9 years and 2 (25%) 10 years or more.

Looking at the overall experience, the webinar group 6 (75%) respondents rated the technology Good(4) and 2 (25%) rated this technology as Great(5).

For students involved in the webinar some of the benefits of accessing the classes from home were:

- Ability to "*catch up on classes*" if missed (as classes were recorded)
- "*Able to engage in learning and progress through the coursework at a distance*".
- "*Allows flexibility, less travel, ability to work around kids*."
- "*Good to have the option of going to class or staying at home. Particularly if you had a 1 hour class and didn't want to journey in.*"
- "*not having to drive out ... more than once a day or have to kill time between them.*"
- "*Saved on petrol and time.*" – comment from 2 students

For the question regarding attending an institute at a distance, one student commented on the capability of having a guest speaker from Australia" and that they were "*able to communicate with people we would not have had the opportunity to do so without this technology*" (see Figure 3).

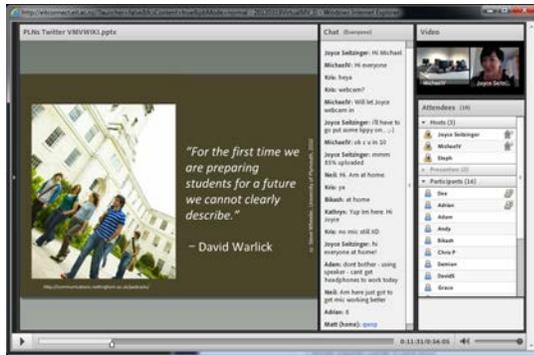


Figure 3. Adobe connect session showing a Guest speaker from Australia, the actual physical class in progress, a combination of students in the class, in the local area (mix class attendance with watching from home) plus a distance learner (Gisborne).

For the question that they could attend class at work, one student responded “Knowing the time of the lectures meant I could arrange my workload accordingly. It also meant that I didn’t disrupt the class if I had to attend to urgent work matters. I was able to “leave” the classroom surreptitiously :)”.

For attending the class from somewhere else a response was “It was nice being able to attend a class from the comfort of my own home”. During the course one student attended class in the Cafeteria of the regional hospital while attending to a sick relative, and several attended class while supervising children at home, or avoided bringing colds/flu into the class.

Most of the sessions were recorded either fully or in part. Students were asked what they thought the benefits to them were. Some of the observations included;

- “Sometimes if you can’t make a class it’s great to see the actual lecture rather than going through slides.”
- “Full time work during the day prevents me from viewing each lecture. Viewing recorded sessions supports flexible study, and a busy workload.”
- “Great for recapping lecture especially for in-depth tech lectures”
- “the classes that started at 8am I had trouble with getting to them on time because of trying to get my family organised in the morning, so I was able to listen back to the recorded sessions on what I missed out on. My family commitments are important to me, and sometimes they had to take priority, so when I can’t make the class I was able to listen back on the podcast.”

For other benefits, respondents replied;

- “Real time engagement and interactivity opportunities, ability to network with other online students. Limits the in-class distractions that other students create.”

When considering the actual experiences for students, disadvantages identified included:

- “Was very reluctant to turn on microphone and use it.” This is obviously of concern as student interaction can be enhanced through their actual participation in class discussion. From a lecturer view it is easy to miss the text chat window when students make comments.

- “Not quite the same as speaking face to face with others.”
- Clarification of questions was an issue raised in one comment “I was unable to hear many of the questions and answers from other students that were in the physical classroom. I have found out that I need regular feedback and access to a lecturer during and outside of class. Normally I would clarify things in class and follow up outside of normal hours. I didn’t feel like I could do this.”
- And a comment around the internet connection and at home distractions “Internet connection from home was patchy Distractions at home made it harder to concentrate”.

Comparing the technology to face-to-face delivery, student’s generally had positive comments such as “Still very personable and could interact with people in class” and allows “..online students to become a ‘part’ of the online experience”. Difficulties experienced included having to “.. concentrate a lot harder to what was going on” and “.. unable to get visual clues”. A comment was made that “Whenever someone who spoke online spoke, the lesson would stop immediately, almost like the virtual class had priority over the real class. In class you would put your hand up but online they would intervene straight away”. In a class discussion it was pointed out that often text based comments were ignored, which is the opposite of microphone comments.

The main issue in using this technology was the “Internet connection”. This was discussed in class and experiments indicated that a wired connection was preferable to wireless.

5.1.3 Comparison

For overall technology experience the video conference group rated the experience more highly, however for both groups all responses were rated Good(4) or Great(5).

When comparing both technologies to face-to-face student’s generally felt there was little difference, with one commenting “Basically exactly the same” and in the case of the webinar “I honestly didn’t find any difference from attending physically or virtually. all you need is microphone to interact with tutor and fast internet connection for fast video streaming”.

What was encouraging is that overall student’s felt that they were engaged in the course, all 3 in the VC indicated “very engaged” while for webinar 38% (3) felt very engaged and 50% (4) engaged. Further when asked “How the technology influenced their engagement” 67% (2) for the VC and 75% for the webinar felt increased engagement.

When asked “What difficulties, problems or issues did you have using this technology?” both groups indicated “connection issues”, for the VC a “slight lag between parties” and for webinar “very difficult to hear the people in the physical classroom”.

Under further comments one of the VC students indicated “Because i work full time It would suit me better if i did i was able to do most of my tutorial sessions at home [Online] as i do check the power point slides regularly It would also help in a huge way if all tutorials were recorded and uploaded”, hinting that some of the features in the Webinar format would be useful. For the webinar students comments included “Continue using adobe connect, I love it!” and “Great technology. It is the way of the future classroom”.

5.2 Lecturer observations

To answer the third research question “*What have we learnt from teaching with these technologies, and can these lessons be applied in a wider context?*” the following section describes observations made by the authors involved in the study based on actual use.

5.2.1 Video conferencing

Having the technology formally approved and set up was an advantage of using video conferencing over webinar software. Large screens were available, good cameras and microphones, and a dedicated connection meant that there were no network speed or availability issues. The technology was easy to learn. Set up at the start of a class was easy – you simply had to turn it on and “call” the other classroom. Another advantage was being able to control the remote setup - camera, microphone and screen, from the main campus. One time I used the remote zoom facility to zoom the camera at the remote campus in on a student’s work on their desk, causing general hilarity (and a rapid covering of other students’ work).

Having multiple screens allowed many-to-many teaching to be undertaken (the lecturer being physically with the class on the main campus and connecting to the class on the remote campus at the same time). Students on both campuses could see students on the other campus, the lecturer and the computer screen all at once. For some smaller classes a decision was made to teach one-to-many (the lecturer on the main campus teaching to a class on the remote campus). Without the high definition camera and large screen it would not have been possible to see students’ expressions where more than one student was remote to the lecturer.

Having a room booked and the technology always set up allowed ad-hoc meetings to take place whenever needed between the lecturer at the main campus and the tutor at the remote campus, or between lecturer and remote students. The high resolution camera and screen allowed for facial expressions and body language to be visible.

Although the fixed set up of the video conferencing did not allow students to participate from home or other locations, both the lecturer on the main campus and the tutor at the remote campus felt that it was an advantage that the students had to physically attend the class. This allowed the tutor to maintain a dialog with them and allowed them to connect to the other students in their class, forming study groups and a support network.

Small technological issues caused the most day-to-day issues. The main problem was not having a camera on the whiteboard in all of the classrooms set up for video conferencing. This was easily overcome by a variety of methods, including updating slides on the fly when more information was needed, putting a sticky note on the screen which the lecturer typed on, or, in one desperate case where a diagram was needed, by drawing on paper and holding it up to the screen! Sticky notes were actually found to be the most effective, because they could be kept on the screen all the time – for example, showing the outline for the class.

In one room with only one screen, the lecturer had the choice of seeing their screen (which they were using to demonstrate the software), or the students in the large screen, and the other view in a thumbnail. This was not satisfactory, as the thumbnail did not allow either the screens or the students to be seen clearly. It was also difficult not to be able to see exactly what the remote students saw on their screens, and this took a while to learn what options on the lecturers screen created what results on the students’

screens. It would have been much easier to have screens exactly as the students had, showing the same things.

One problem reported for lecturers teaching many-to-many was hearing student’s comments. Microphones were installed in the ceiling to rectify this problem, although it can still be hard to see a student amongst a large group on the screen.

The biggest continuing issue is a tiny one – the lights in the classrooms are on motion sensors, and if the lecturer stays in one place – to stay within the camera’s range – they turn off every 10 minutes.

Social issues are perhaps harder to overcome. Lecturers who did not meet their students physically at the start of the class noted that it took a long time to get to know the individual students and form a connection with them. In this case the tutors at the remote campus became a crucial part of the course, as they formed this bond with the students and could provide individualized support.

5.2.2 Webinar

From the lecturer’s view what were the perceived benefits of using the webinar technology. First, it enabled a remote student to be enrolled in the class and be part of the actual class. In addition as the webinar software did not require any special hardware, software, or location it was accessible by any student with an internet connection, a web browser and speakers. To enhance the students experience a headset (headphones/microphone) or web-camera were all that was required. To enable the technology to be used by the lecturer a “virtual room” needed to be set up by an administrator, and to allow students to participate in the live class a basic web-camera was all that was required. Although the initial reason for setting up this technology was to allow a single remote student to participate in the class, other students soon realized they too could use this technology from remote locations. Instances where students were able to participate included: where they were ill, or more often a family member; where parents had to look after children; Where they were at work with limited time to drive to the class; where the class was of an hour duration and students had significant transport time (and cost) to come to class; and in one case where a student was looking after a sick relative in the hospital and was able to join the class from the hospital cafeteria. In reverse, as the lecturer I was teaching at the remote campus and had a guest lecturer in the class on the main campus. Through Adobe Connect I was able to supervise and interact with the class and guest speaker remotely.

Another unexpected benefit was that Adobe Connect provided the ability to record the sessions. The actual file sizes proved to be compact given the amount of information being captured, with a size of about 100MB for an hour of class. Feedback, particularly from international students, and students that had missed classes was very positive (as highlighted where recordings were not put up soon after the class). Issues related to the recordings were: forgetting to start the recording session, and at the end forgetting to terminate the recording.

There was concern that for struggling students, the use of webinar software from home may be the start of a decline in attendance and subsequent “dropping out” of the course. This is certainly possible however this semester one struggling student actually attended the webinar classes for significantly longer than his face-to-face classes, and this also created an opportunity for the lecturer to continue a dialog with the student and to try to help him recover.

Connection speeds were of concern. Connecting remote web-cameras to the class proved to be problematic, and this was particularly noticed when connecting the guest speaker from Australia. It was found that for best performance a single web-camera feed worked best, with students using voice or text to communicate. Another issue discovered, was that when the microphone on the main lecturer's machine was disabled/enabled the software tended to hang (not responding error), and it was found that it was better to just leave the microphone enabled and turn down the pick-up.

An issue that the webinar software had issues with was capturing the student comments from the class. This was raised as feedback in the survey *"very difficult to hear the people in the physical classroom"*. The web camera's microphone had a good range in front of the camera, which meant it captured the lecturer's comments; however, as students were at the rear of the camera their comments were not picked up by the microphone. From a teaching perspective this was managed by restating the question or comment made by the face-to-face students. Pedagogically there is some support for this as it meant the student making the comment could be assured that their comment/question was understood, however, this did mean that the discussion flow was interrupted. A multi-directional microphone has been purchased and its effectiveness is being evaluated.

There was a general reluctance for many students to remotely participate with a microphone, most preferring to use the text chat mode to communicate with the lecturer and indeed there were many instances where a backchannel (student-to-student) was taking place during the class. However, in the context of a face-to-face class this is not dissimilar to what occurs in the classroom where many students are reluctant to communicate in open discussion. Interestingly many students in the physical class chose to have the Connect session open on their machine and communicated with both physical and remote students during the course of the class. It was also interesting that student would sometimes clarify in real time issues that were raised in the class through the chat discussion.

The speed of the internet connect was an issue. At times the load on the connection meant that the remote connection was less than suitable for student remote access. It was found that it was important to avoid wireless connections as this adversely affected the transmission. If a student wished to communicate via voice or video a wired connection is preferred, otherwise text based conversation should be encouraged.

As the course progressed some tools were found to be beneficial to deliver in this mode.

Electronic Smart Board. One of the problems when remote students are observing a lecture is when the lecturer refers to something on a whiteboard, as indicated in the student comment *"unable to get visual clues"*. Using the drawing capability of the Smart Board meant that the lecturer can underline/circle/highlight on the board what they are discussing. Also, from a face-to-face perspective the physical class is delivered in an interactive way with the lecturer interacting with a large whiteboard as opposed to sitting in front of a computer and working on a "personal" screen.

However, as not all rooms are equipped with a Smart Board, another tool proved very useful. Zoomit [8] allows drawing on the computer screen to enable students at a distance to see what was being referred to. The ability to highlight and annotate was also suggested as important in a webinar by Bovell [3].

While Adobe Connect provides a sharable electronic whiteboard Google documents also proved to be very useful as they allowed for both in-class and remote collaboration in real time.

6. CONCLUSION

This paper considered three questions:

1. What are the benefits that these technologies (video conferencing and webinars) deliver to students and educators?
2. What are the issues and disadvantages of using these technologies to deliver courses of learning?
3. What have we learnt from teaching with these technologies, and can these lessons be applied in a wider context?

Student responses clearly showed that students appreciated having either video conferencing or webinar classes available to them. Both enabled students to take courses that would not otherwise be available to them. In addition the webinar software enabled students to view the class when they couldn't physically or temporally attend.

It seems that the video conferencing setup is better for a remote group, especially with the high resolution camera and screen. The webinar software may be preferable for remote individuals and at multiple locations, and allows more individual flexibility.

The following lessons can be drawn, many of them easy to implement:

It was found that meeting the class face-to-face at the start is a great advantage in creating a connection.

High resolution cameras and screens are an advantage when teaching a group, although this does not preclude webinar software.

Attention can be paid to what "views" the students will have, and what problems this may cause, for example by having a drawing tool or incorporating diagrams and information usually drawn on the whiteboard into slides.

Small technological issues such as picking up sound and lights turning off cause large headaches, but can be easily solved if followed through by the lecturer and if the institute is willing to pay attention to them.

6.1 Limitations

A significant limitation of this research is the small sample size, however, the results provide insights and possibilities to extend and expand the study. As this is the first cohort of students to experience this technology it was important to capture feedback from the initial stages before both the lecturers and students become familiar with the implementation, operation and use. This is desirable as it will be of value to those wishing to try this technology for the first time.

As not all students completed the survey, students who were dissatisfied with the delivery may not have been included in the results. This could be why the overall satisfaction was rated 4 or 5 out of 5.

6.2 Ethical considerations

The survey was conducted online and the technology used does not allow individuals to be identified. With such a small sample size care was taken that the questions would not easily identify

students. Also, for the overall experience respondents were instructed “*Please try not to rate the quality of the course, lecturer or facilities - we’re asking specifically about the video conferencing/webinar technology*” to ensure the results reflected the technology not issues with the lecturer or environment.

Participation in the survey was voluntary, and respondents could select which questions to respond to.

7. FUTURE WORK

More courses are being delivered to the remote institute using the video conferencing technology over the next few years.

With the trialing of Adobe connect some students are now asking for the technology to be used in other classes. As it can be run from any of the rooms that have a computer connected to the internet and only require a web-camera this option is possible. However, there are many questions and concerns that this raises. For example, will this affect the attendance and subsequent completions in class?

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9. SURVEY QUESTIONS

We are investigating the benefits and issues of delivering classes remotely, and would really appreciate your feedback.

Please identify which technology you used. If you have used both, please fill out the survey twice (once for each technology). This is a required question. *

- Webinar (Adobe Connect)
- Video Conferencing

How would you rate your overall experience with this technology? Please try not to rate the quality of the course, lecturer or facilities - we're asking specifically about the video conferencing/webinar technology.

- Awful (1) ... Great (5)

What were the benefits to YOU of using that technology?

- I could attend classes from home

Explain why you wanted to do this, and the benefits to YOU of doing this:

- I could attend classes at a different institution to where the tutor was.

Explain why you wanted to do this, and the benefits to YOU of doing this:

- I could attend the class from work.

Explain why you wanted to do this, and the benefits to YOU of doing this:

- I could attend a class from somewhere else.

Explain where, why you wanted to do this, and the benefits to YOU of doing this:

- I could catch up later from a recorded session.

Explain why you wanted to do this, and the benefits to YOU of doing this:

Were there any other benefits to YOU that you can think of?

Your experiences

Were there any disadvantages to you of using this technology? Please discuss:

Compared to face-to-face delivery (being in a classroom with the tutor), how would you compare using this technology?

Rate your engagement in this course

- Not engaged (1) ... Very engaged (5)

Has the technology influenced your engagement?

- Reduced engagement (1) ... Increased engagement (5)

What did you enjoy most about being taught this way?

What difficulties, problems or issues did you have using this technology?

Are there any other comments you would like to make?

Something about you

Gender

- Male, Female

Age range

- <20, 20-24, 25-29, 20-34, 35-39, 40+

Highest prior tertiary education

- No prior tertiary education
- I have completed an undergraduate diploma
- I have completed level 5 or 6 degree papers
- I hold a degree qualification
- I hold a postgraduate degree qualification

Indicate your level of computer confidence

- Novice (rarely use computers)
- OK (happy working on a computer)
- Confident (can manage files, use the internet and a variety of applications)
- Proficient (happy to provide assistance to others)
- Expert (can create software, would be considered a power user)

Years of Work Experience

- 0-4, 5-9, 10 or more