

ascilite 2010 sydney



R U there yet? Using virtual classrooms to transform teaching practice.

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Access to quality higher education is challenging for many Western Australians that live outside the metropolitan area. In 2010, the School of Education moved to flexible delivery of a fully online Bachelor of Education degree for their non-metropolitan students. The new model of delivery allows access for students from any location provided they have a computer and an internet connection.

A number of academic staff had previously used an asynchronous environment to deliver learning modules housed within a learning management system (LMS) but had not used synchronous software with their students. To enhance the learning environment and to provide high quality learning experiences to students learning at a distance, the adoption of synchronous software (Elluminate Live) was introduced. This software is a real-time virtual classroom environment that allows for communication through Voice over Internet Protocol (VoIP) and videoconferencing, along with a large number of collaboration tools to engage learners.

This research paper reports on the integration of a live e-learning solution into the current LMS environment. Qualitative data were collected from academic staff through informal interviews and participant observation. The findings discuss (i) perceived level of support; (ii) identification of strategies used to create an effective online teacher presence; (iii) the perceived impact on the students' learning outcomes; and (iv) guidelines for professional development to enhance pedagogy within the live e-learning environment.

Keywords – elearning; synchronous software; academic professional development

Introduction

The needs of learners in the higher education sector are changing rapidly, as university students of 2010 and beyond are faced with the impending challenges of modern society. In 2008, the Australian Bureau of Statistics reported there were 106,200 higher education students within Western Australia alone. Almost 30,000 were over 25 years of age, which brings forth the notion that almost one in three are studying alongside the challenges of financial and family commitments. In order to provide learning environments that offer the flexibility required by these students, more higher education providers are turning toward the notion of e-learning. The use of asynchronous communication in distance learning is certainly not new, however the idea of engaging students in a real-time environment to enhance their learning is less documented.

An increasing number of sessional teaching staff are employed within Curtin University and across other universities within Australia (Coaldrake, 1999). Although this presents some challenges with regard to professional learning, the fact remains that these valuable employees play a crucial role in providing quality teaching and learning environments. Regardless of the employment status of staff,

implementing technology into teaching and learning is gradually being expected of all teaching staff within the university. This paper reports on the professional learning procedure adopted at the School of Education for both sessional and full time academic staff, who implemented a synchronous software solution within a learning management system.

E-learning

As higher education providers move to implement technology into their teaching and learning in the on campus environment, there appears to be prevalence of combining e-learning with face-to-face traditional classroom practice. This mixed-method of learning deliveries is referred to as blended learning (Alonso, Lopez, Manrique & Vines, 2005). Campbell (2004) identifies blended learning as a combination of face-to-face instruction and e-learning modules that provide a program to meet a learner's needs. An effective blended learning program emphasises the needs of the learner and can be used to accommodate diverse learning styles. Much of the literature reports on the recent emergence of blended learning in the higher education sector, recognising the factors that contribute to its success or failure (Griffin & Thomson, 2008; Stacey & Gerbic, 2008). A critical factor that resonates from many authors is the importance of, and need for, continuing professional support and learning for academic teaching staff.

Ten years ago, Bates (2000) had the foresight to advocate four levels of human support required to fully exploit the use of ICT: technology infrastructure support staff (technical support – install, operate, update and maintain networks and equipment); educational technology support staff (staff who support the development and application of educational materials and programs using technology); instructional design staff (staff who provide educational services and expertise, such as instructional design, professional development, project management, to support the use of technology for teaching); and subject experts (those who create content, such as academic staff).

As learners are not limited by time and location, the flexibility offered through e-learning is advantageous to all learners (O'Neill, Singh & O'Donoghue, 2005). Students can access learning resources on the Blackboard learning management system from any place with Internet access and at any time that is personally convenient to them. The flexibility of e-learning allows a self-paced, self-directed, autonomous learner who engages in a 'virtual' environment that simulates the experiences of those enrolled in face-to-face programs.

Bringing live or real-time learning opportunities to the program by means of online tutorials, chat rooms, video conferencing and the like, is referred to as synchronous communication. It has been suggested the benefit of immediacy offered by synchronous communication can remove the flexibility that is promised within an e-learning environment (Bates, 2005). The learners' commitments outside of study could possibly limit their ability to interact within a synchronous session. The School of Education considered this seriously prior to implementing the regional model of asynchronous and synchronous software. The web-based synchronous learning solution, Elluminate Live, was used to enhance the learning experiences of the fully online learners. Within Elluminate, the moderator can record the session and ensure that all students within the unit are able to access it after the event. As the recording progresses, index entries are inserted to mark significant events within the session, allowing for ease of navigation within the recording. Although some students may not have been able to attend, they were never disadvantaged due to the availability of the recording.

To evaluate the extent of technology based learning within a program, Bates and Poole (as cited in Bates, 2005) developed the following continuum illustrated in Figure 1. The mode of delivery developed by the School of Education, is situated at the extreme end of Bates and Poole's continuum as lecturer and students are engaged in a fully e-learning experience.

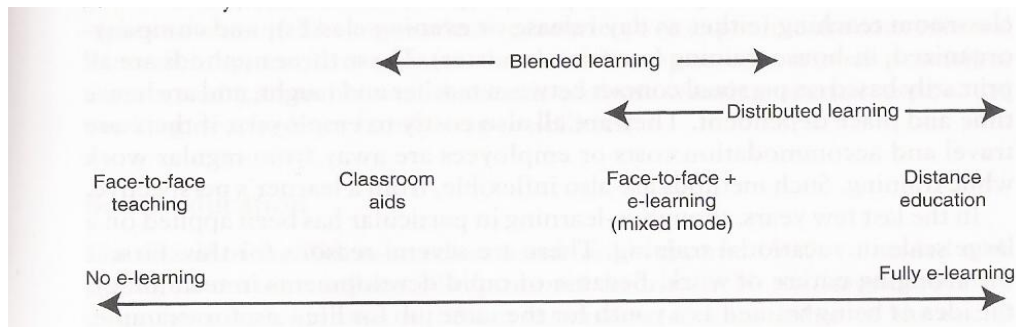


Figure 1: The continuum of technology based learning (from Bates, 2005, pg 127)

Understanding change and innovation adoption

Understanding the very nature of change provides a valuable base when examining the adoption of new technology and the professional learning that is required to implement the new technology. Marris (1975) and Senge (1999) argues that a sense of personal loss, anxiety and struggle is involved in all real change and reminds us of the importance of recognizing this reaction. Schon (1971) notes that real change involves “passing through the zones of uncertainty” (p 12). Fischer (1986) and Potter, Dawson, Marton and Nitz (1998) link this loss of control over one’s environment which change creates, to resulting stress. Marris (1975) suggests that with each new experience an individual initially attempts to place it within their own context by linking it to something familiar. Importantly, Fixsen et al. (2005) and Fullan (2007) believe that an innovation requires a shared meaning if it is to be adopted and assimilated into an organization. This notion of constructing shared meaning necessarily involves others within the same social system.

Fullan and Stiegelbauer (1991) suggest that implementation of educational change involves ‘change in practice’ and the subsequent difficulty in defining and accomplishing change is that educational change is not a single ‘entity’ – innovation is multidimensional. They believe that there are at least three dimensions at stake in implementing an innovation: “1) the possible use of new or revised materials; 2) the possible use of new approaches and 3) the possible alteration of beliefs” (Fullan & Stiegelbauer, 1991, p 37). They suggest that innovations which do not contain these dimensions are more than likely to lead to insignificant change.

One well regarded model concerning the diffusion of education innovations has been based on the work of Rogers (1995). Under this model, for significant change to occur, a ‘critical mass’ of individuals need to have adopted and implemented a given innovation (Deden, 1998). This ‘critical mass’ occurs when enough individuals have adopted the innovation so that the innovation’s further rate of adoption becomes self-sustaining. The literature suggests that this can be a slow and in many cases, a painful process (Candiotti & Clarke, 1998).

In addition, Rogers (1995) believes that members of a given social system adopt innovations at different rates. He defines five characteristics of innovations which affect this rate of adoption – relative advantage (to what extent the new innovation is better than the one it is replacing), compatibility (the level to which the innovation is consistent with the needs, culture, and value of the adopters), complexity (the degree an innovation is perceived as difficult to understand and use), trialability (the degree to which the adopter is able to experiment with the innovation – test run), and observability (the level of which the results of an innovation are apparent to others). In other words, innovations that are perceived by members of a social system as having a greater relative advantage, as being compatible with their belief and value system, are not perceived as complex, are able to be effectively trialled, and the value is easily observable – are likely to be adopted more rapidly than other innovations. According to Rogers (1995) other diffusion scholars found that relative advantage was the best predictor of an innovation’s rate of adoption.

The regional Illuminate project

The School of Education’s revolutionary journey into online learning has been recently documented by O’Hare, Pelliccione and Kuzich (2009). The School of Education commenced the provision of the first online undergraduate Bachelor of Education (Primary) degree through Open Universities Australia (OUA) in March 2009. In August 2010, the Bachelor of Education (ECE) degree will also be offered

within this mode of delivery. These programs are offered within an asynchronous mode of delivery to cater for students located in many different time zones, both nationally and internationally.

Prior to 2010, the Centre for Regional Education at Curtin University delivered undergraduate education degrees in physical campus locations around the state of Western Australia. Although this served the purpose for the time, it restricted the degree to only those rural students who were able to access the physical campus. In 2010, the Centre for Regional Education was disbanded and the School of Education moved to flexible delivery of a fully online Bachelor of Education degree to cater for the rural students. The new model allowed access for students in any rural area who have a computer and an Internet connection, regardless of their geographical location. As a result enrolments have seen a positive increase in new students for rural areas.

At the beginning of 2009, a number of academic staff had been involved in the creation and delivery of the Bachelor of Education (Primary) units for the OUA program. At this point, first year primary units were developed with the view to roll out subsequent years over the next four years. Offering the online delivery to rural students meant ensuring those students enrolled in existing Early Childhood and Primary degrees were able to enroll in units from first to fourth year. This presented a challenge to ensure a large amount of units were developed in the online mode in time for Semester 1, 2010 delivery.

To enhance the asynchronous learning environment and to provide high quality learning experiences to rural students learning at a distance, the adoption of synchronous software was introduced. In the past, the Centre for Regional Education had offered some units through a multipoint videoconferencing solution between regional campuses. The software used in the new model is a real-time virtual classroom environment that allows for communication through Voice over Internet Protocol (VoIP) and videoconferencing, along with a large number of collaboration tools to engage learners. Students can access it from any location that has a computer and an Internet connection.

Aims of the study

This research project aimed to identify effective online teacher presence in an e-learning environment (including both asynchronous and synchronous communication) and develop guidelines for further professional development. To achieve this aim, the project investigated the perceptions of academic staff in terms of professional development, including technology capacity and pedagogy. The key research questions which guided the study were:

- How do the lecturers perceive the level of support that was provided to them?
- Identify the strategies used to create an effective online teacher presence?
- How do the lecturers perceive the impact of Elluminate on the students' learning outcomes?
- Identify the guidelines for professional development to enhance pedagogy within the live e-learning environment?

Participants

The synchronous software was embedded within 25 units throughout the Bachelor of Education Early Childhood and Primary degrees in 2010. University ethics approval was sought prior to commencing the research project. Full time (n=8) and sessional (n=10) academic staff who implemented Elluminate into their delivery of unit materials were invited to participate in the study. Semi-structured informal interviews were held with academic staff (n=10).

Professional learning procedure

The need for professional learning when adopting new technology has been well documented in the literature (Bates, 2005; Marshal, 1998). The School of Education provided a number of different avenues for staff to learn and engage with this new learning environment. This professional learning involved a staggered approach through five distinct stages.

Stage One involved a targeted email to staff directly involved in the Elluminate sessions with web links to information and tutorials. It was suggested in the email that staff download the software, work through the tutorials and familiarize themselves with the basic functions prior to the professional development session being held.

Stage Two of the professional development (PD) was developed using the traditional method of PD whereby a one-off session was offered by the Virtual Classroom System Co-coordinator from the Centre of e-Learning at Curtin University. This session was aimed to provide an initial introduction to the Elluminate Live environment. A total of 14 academic staff attended this session where the facilitator gave instructions on how to setup sessions through the Elluminate Bridge, which is housed within the existing Blackboard environment. As the Bridge was recently installed and the facilitator had not used this facility from within the School of Education Blackboard sites, he was unable to connect to the live environment. This resulted in the participants being limited to static screen shots of the virtual classroom.

The inability to fully engage with Elluminate Live in this first session caused the Co-coordinator to provide another session. The attendance at this follow-up session saw a much lower level of staff attendance. At this session the participants were able to access the Elluminate Live environment. They had the opportunity to setup sessions, explore the various facilities, and participate in live sessions with others.

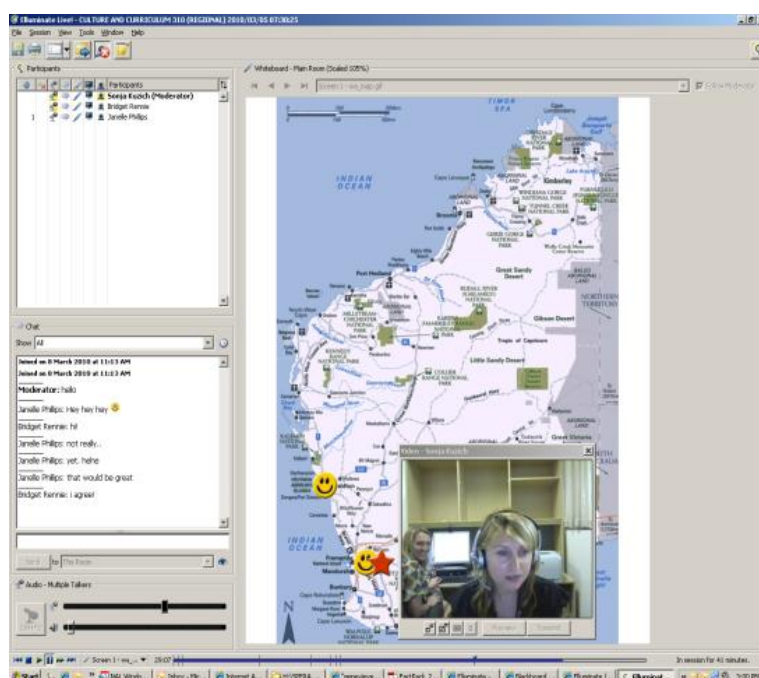


Figure 2: VOIP, chat room, whiteboard & webcam with peer mentor

Stage Three of the staggered professional learning was structured using a peer mentoring model. This involved the support of an experienced academic staff member known as the peer mentor, participating in the Elluminate Live sessions for the first three teaching classes of the semester. This stage was seen as a crucial element of the professional development model and thus the time allocated for this task was factored into her workload for the semester. Each session ranged from 30 – 60 minutes. This peer mentor was experienced in e-learning practices using both asynchronous and synchronous software. Within these initial sessions, the lecturers assumed the joint role of ‘moderator’ for their session with the full support of the peer mentor. This provided an opportunity for lecturers to learn, gain confidence and develop problem solving strategies in an authentic environment and within the context of their own units. It is important to note that the regional students involved in these units were also novices with Elluminate Live. Thus, the peer mentor spent the very first session introducing the various functions to the students as well as the lecturers.

It was envisaged that some lecturers would require further support beyond the initial three sessions with regard to solving technical issues. Stage Four involved employing a Learning Management System Officer to support all academic teaching staff in the School and supporting those using Elluminate Live was one of her key roles. She was located on site and easily accessible to where the Elluminate sessions were being held.

At the end of the semester, Stage Five of the professional learning involved a reflective session where academic staff were invited to review their teaching practices within the e-learning environment;

consider the impact on student learning outcomes for their unit and consolidate ideas for implementation in Semester 2.

Results and findings

A total of ten academic teaching staff were interviewed, three full time staff and seven sessional of which all were female. The interview data revealed that their experience with teaching at the tertiary sector varied greatly. However, their experience with teaching in an asynchronous and synchronous learning environment was very similar. Table 1 provides a summary of these differences and similarities between the samples.

Table 1: Sample profile

Staff ID	Tertiary Teaching Experience	Taught in an Online Environment	Experience with Asynchronous	Experience with Synchronous
1	15 years	No	Yes	No
2	6 months	No	No	No
3	18 months	No	Yes	No
4	12 months	No	Yes	No
5	30 years	Yes	Yes	Yes
6	6 months	No	Yes	No
7	2 years	Yes	Yes	No
8	4 years	Yes	Yes	No
9	18 month	Yes	Yes	No
10	7 years	No	Yes	Very Little

The shaded areas in Table 1 reflect the participants who conducted their Elluminate sessions from their own home, while the remaining participants conducted their sessions in a dedicated room at the University. Regardless of location the University provided all of the participants with appropriate equipment and access to Professional Learning.

Level of support

During the interviews the participants were asked, “how do you perceive the level of support that was offered?” Interestingly, only three of the ten participants interviewed revealed that they had explored the online training materials provided in Stage One. Lecturer 4 went through the online tutorials prior to attending the professional development workshop while lecturer (9) engaged with the tutorial after the very first Professional Learning (PL) session. Lecturer 6 who lives outside the Perth metropolitan region also worked through the online tutorials.

All, except one (Lecturer 6), of the participants attended at least one of the training sessions offered in Stage Two but only two participants identified that this was very useful. Lecturer 2 and 4, attended the second Elluminate workshop conducted by the University Virtual Classroom Co-coordinator. Lecturer 4 commented about how this workshop suited her own personal learning style, “the 2 hour training course was wonderful, I did the online training first, but being able to do in a classroom was great, we had a conversation with each other and he showed us how to check the microphone ... it was still very new and it took a while for me to learn, but I am one of those learners who needs to learn by doing”.

Lecturer 3 who attended both PL sessions in Stage Two said that, “It was just a snow storm of random information”. There was a much lower level of attendance at the second session as staff had been disappointed with the inability to access Elluminate in the first session.

As noted in Table 1, three of the participants in this sample opted to conduct the Elluminate sessions from their own home, which meant that they were not able to access the PL identified in Stage Three. This stage involved an experienced lecturer (peer mentor) in e-learning working with each lecturer during their first three live sessions. When asked about the level of support during the interviews the majority of the participants identified this process as being the most valuable. The following comments reflect their views:

- I would not have survived without it!

- It was fantastic, ... but having you there for the first three sessions was fantastic because most of the issues that have arisen since arose in those three sessions for instance the stopping, having to log out, having to send an email if something went wrong, really I have only had one or two issues
- I think what was important was having someone sit us through the first sessions, it was important and necessary as there were some things that were not happening and problematic things dropping out and so on
- For me personally I thought it was very good. ... I think one of the best things was that we had a dedicated room where everything was set up to go and there was a person there for troubleshooting advice. As I was a total novice to it I wouldn't have been able to cope with any hiccups as I just wouldn't have known where to go to. It was essential having an experienced person on staff sitting next to you in those first few sessions
- That guide on the side level of support was really really useful and comforting. I did go onto the Elluminate site beforehand and have a little bit of a play around. As with me and technology I have to use it a few times before I actually know what I am doing

Lecturer 6 did not attend any of the PL sessions and was not able to have the experienced lecturer at her side but what was really interesting was that the Unit Coordinator located at the Bentley campus assisted her on her very first live Elluminate session in the same manner. This session was actually conducted in the early evening, while the others were during the day.

(Unit Coordinator) attended one of your sessions (peer mentor sessions) and then she sat in on the first one that I did and that was really helpful having her there. At one point people were putting their hands up and she was able to instruct me of what button to press etc. She was also able to talk the students through better. It would have been terrifying if she wasn't there at that stage as I hadn't had the practice before hand and so having her there made a big difference on those first sessions. I'm not sure that I can think of any other way that given my regional location. I did go online and look at the online tutorials and I went through that, but it was a different matter once we were live.

The researchers believe that very few people would actually consider being interviewed as a form of professional learning. However, the opportunity to reflect on your own teaching and ask questions of the experienced peer mentor who has supported them through the semester is a very powerful vehicle for personal and professional growth. This became evident on a number of occasions during the interviews.

During the interviews the participants were also asked how the professional learning being offered could have been improved. One of the key issues that was raised was the importance of having more time to actually learn and use Elluminate prior to the sessions with the students. Participating in live sessions as students themselves was one of the suggestions made by Lecturer 9. Other comments ranged from providing trouble shooting information sheets to providing information about the principles and practices of online learning. A number of the lecturers commented on using some of the basic functions in Elluminate and would have liked to know how to integrate Elluminate more effectively into their teaching sessions to support the students.

Would have liked to have known a lot more about it ... as it has the potential to really bring the students into the classroom environment that can be missing from online education.

Elluminate functionality

This sentiment was also reinforced when examining the Elluminate functions being used by this particular group of participants: voice, whiteboard, file sharing (PowerPoint), emoticons, chat and the video camera. Interestingly, one lecturer (7) noted, "We used the video a few times but the students were not really keen to do that so I don't know if I scared them or if they liked to be anonymous behind the microphone. I did try to use the whiteboard a few times especially when we were talking about assignment rubrics. I didn't really use any other functions probably didn't use it to its full potential really".

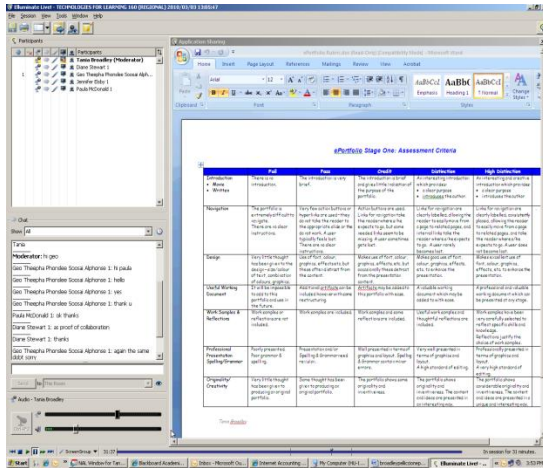


Figure 3: VOIP, chat room and application sharing

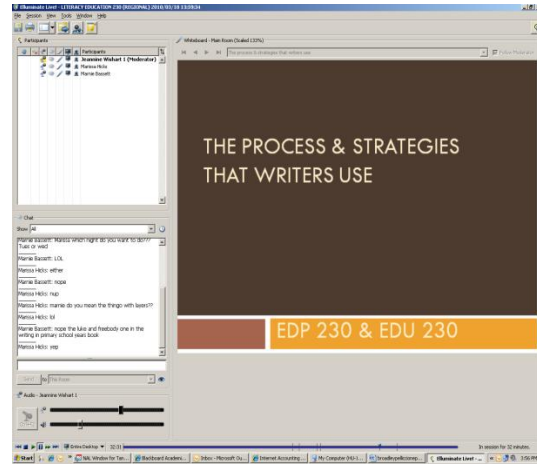


Figure 4: VOIP, chat room and PowerPoint presentation

Teacher presence

The participants were also asked to identify the strategies they adopted in order to create an effective online teacher presence. The interviews revealed that this group of participants who came from such varied teaching experience (6 months – 30 years) were able to consciously articulate the strategies they adopted. Interestingly, the majority of them noted that they tried to emulate the same type of experiences the students would engage in if they were in a ‘typical’ workshop/class. They tried to provide a supportive learning environment by getting to know the students and making them feel comfortable.

- like a workshop and discussion time
- tried to build relationships with the students
- the same kind of things of things that you would do if you were having a discussion with a group of people
- We just did a lot of talking in the first few sessions I tried to build up a bit of a rapport with the students
- The video camera was a good start, they could see who I was and where I was
- The usual things that I would use in a class

All of the participants tried to make their presence felt through engaging in the online discussion board and then commenting on these issues in the weekly Elluminate session. Many of the comments regarding the type of strategies they adopted in the Elluminate sessions focused on the actual ‘structure’ of the session. It seems that staff felt more comfortable or perhaps more in control when there was a clear structure to the session. For example, Lecturer 3, would follow this pattern:

I would identify what I was going to talk about - I gave them notification on the discussion board. I would give them a paper like a cheat sheet so that they knew what I would be talking about in the session. I would do a PowerPoint – this helps you to focus on what you want to talk about. A target in a way - as often I would have a question and answer after the session. I didn't do much direct teaching. There is scope for that - but you actually do when you are talking about the assignment. I do try and keep them on the discussion board I try not to answer via email.

In addition, Lecturer 7 found that she was doing a great deal of the work and decided to alter the structure of her sessions to encourage more active participation and engagement by the students.

But I guess I just did a lot of ‘question and answer’ routine and I felt that it was always me driving the content. Although towards the end I think I got a little bit smarter and said in the next Elluminate session I really want to talk about ‘this’ and have a think about it and come with some ideas. As it got further a long I also think that the students realised

that it wasn't actually frightening or scary and that no one was going to shoot you down in flames.

One of the participants new to tertiary teaching as well as the online environment found it a real challenge responding to questions on the discussion board and then having to respond again in the Elluminate session. She suggested that next time she would adopt a different model. She would ask students to pose questions on the discussion board prior to the Elluminate session so that this would provide her with more time to respond to their questions in a more effective manner. She also indicated that this may attract more students to the actual live session.

Impact on student learning

The participants were also asked to identify how they believed the Elluminate sessions impacted on the regional students' learning. Table 2 provides some examples of their responses.

Table 2: The impact on student learning

General Category	Participant Comments
Better learning outcomes	<p>Those who engaged I think it has been fantastic - they seem to be the ones most confident when they do their assignments. They may not be the HD students but you wonder they would be a credit if they didn't have the support.</p> <p>Yes I think, it won out at the end. I have to tell you that the ones that were on there, the assignments were better written. Now that might have just been a fluke but if you asked me the people who listened got the exact clarification that they needed for their assessments. They also talked about the content with others. So I think that their learning experience was enriched and their assignments showed that it was.</p> <p>It was evident in their assessments those who attended the session or listened to them afterwards had better marks as they had clarified it. It leads to an improved product. I had someone mention that they had listened after the sessions.</p>
Greater sense of community	<p>Huge, I think that they didn't feel part of Curtin, even though we have been giving them BlackBoard, but just being able to put a voice and talk with them, much bigger impact on them than on us.</p> <p>I believe it has been a positive benefit for those who logged on live. It has given them a sense of belonging to a group and contact that they tend to need to feel as if they are working the way they should. They got to know other students better and this also provides them with a support network.</p>
Engage with the content, make connections	<p>I think for the students who have kept up with the sessions throughout the semester it has been really helpful for them to talk about things and discuss. I try and draw them into conversations - as some of them have their own children and are in schools. I link back to classrooms, get them to share. Making connections with what they read and talk about with real experiences.</p> <p>Those students who did use Elluminate also tended to be the ones who were active in the discussion forum and posting of weekly tasks. I do not know how many actually watched the recordings or if they learnt anything from them.</p>
More Efficient	<p>It is like being on a phone conference, a nice environment and what is different it has cut down my time as well as I was talking to the whole group.</p>

All except one of the ten participants appeared confident that the Elluminate sessions had made a positive impact on the regional students. Lecturer 5, who was the exception was markedly different and commented mainly on her students' inability to make the transition from their previous local community support networks to an online support environment.

The regional students work differently they are a different demographic because they came into the program with a different set of expectations and so they came in expecting that they would have their local tutor. Therefore they aren't necessarily gun-hoe about using all the technologies. There is an issue there - suddenly they have to switch on to the technology where they didn't have to before hand and I think for some it was like how much can I cope with and that context Elluminate was just one more thing. I think also the nature of their previous work they would have established their local networks and of course in some centers they have relied on their networks in their local community to support each other. ... discussion boards are set up around the key concepts and there are a whole set of forums that are set up around the portfolio tasks. Even if people do not want to actively be involved online around the content you would expect them to have cropped up in the other forums just to get clarification with what was required. They are very big under-users of this facility. ... Only a few of them have set up their blogs during the semester - they have established their blogs but they have not uploaded their portfolio items for comments or feedback, so they are in different space about the concept.

Professional learning needs

The School of Education implemented a number of Professional Learning strategies to help lecturers implement Elluminate Live so one of the key questions asked during the interview was “What further Professional Learning would be useful to you – to assist with pedagogy or technology?” The majority of the lecturers commented that they still required both – technology and pedagogy. They needed more sessions to build on their existing knowledge. They wanted the skills and knowledge to use more than just the basic Elluminate functions. Lecturer 2 identified the need for clear guidelines regarding the actually Elluminate sessions. These guidelines should set out clear expectations for lecturers conducting the Elluminate sessions and for student participation. A few of the lecturers commented on how much they enjoyed the added dimension that Elluminate provided. Lecturer 10 also suggested that there should be a support line for the regional students as she did not feel comfortable enough with the technology to be able to support them.

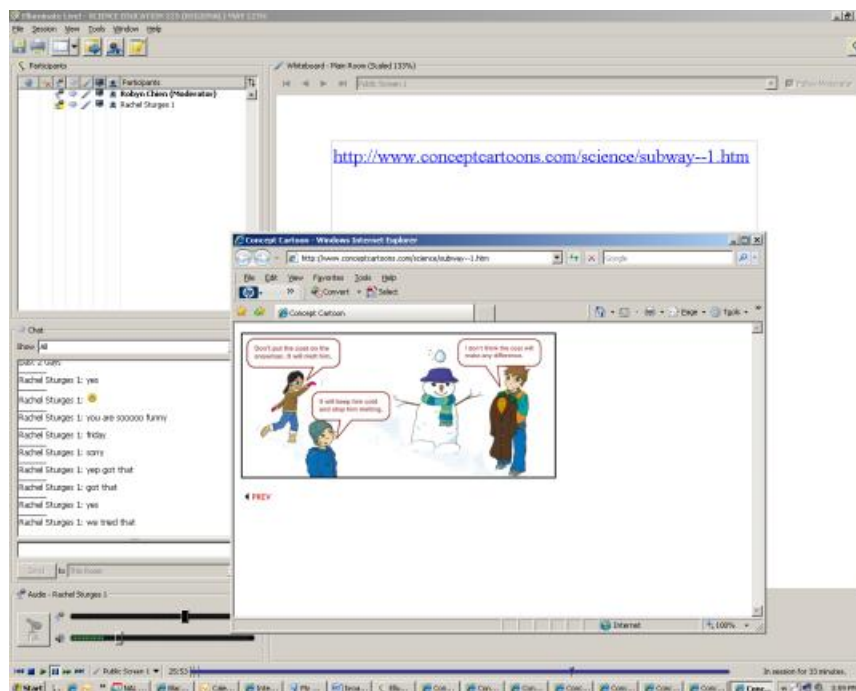


Figure 5: Lecturer using VOIP, chat room and web tour

Implications and conclusions

The need for professional learning when implementing change has been exemplified throughout the findings of this study. Three out of the ten lecturers interviewed reported they had accessed the online training materials prior to Stage 2 of the PL model. All but one lecturer attended the face to face PL sessions with only two attending the follow up. The peer mentor identified in Stage Three worked

across three of the four support levels identified by Bates (2000). The peer mentor assisted with technical, educational and instructional design support. The peer mentor worked closely with the lecturers who were seen as the subject experts. The staggered five stage professional learning approach attempted to provide support across these four levels. The data clearly revealed that the peer mentor support which occurred in stage three was considered to be the most valuable and crucial to the success of the uptake. As identified earlier understanding the very nature of change enables us to appreciate the complexities involved when lecturers and students are asked to adopt a new technology such as Elluminate. The feelings of loss of control (Fischer, 1986) and uncertainty (Schon, 1971) appeared in a number of the comments made by the lecturers throughout the interviews. It is essential that support is provided at the appropriate time in order to help people transition through these feelings of uncertainty.

Teacher presence was established by attempting to simulate a typical classroom/workshop experience. This is strongly supported by Marris (1975) who identified that people tend to link new experiences to something familiar. One of the key implications identified through the research was that clear guidelines and expectations should be developed regarding the structure of the Elluminate sessions. The researchers believe that it would be valuable if these guidelines are devised by those directly involved with teaching regional students. It would certainly be more meaningful and would help establish a 'shared meaning' as suggested by Fixsen et al. (2005) and Fullan (2007). The interview data also revealed that lecturers desire and need structure to their Elluminate sessions. They believe that students need to be informed of this structure. A few of them experimented with a number of different models while others identified the type of structure they would use in the future.

The majority of the lecturers identified that the Elluminate sessions made a positive impact on the learning outcomes of the students. In addition, they identified that this synchronous environment helped create a greater sense of belonging and community. It helped establish stronger links and encouraged greater engagement with content and people. Interestingly, Bates (2005) noted that adopting synchronous tools in e-learning environments would stifle student flexibility. This study found that the ability to record the Elluminate sessions still afforded students the flexibility of online learning. It was evident that not all of the students participated in the Live Elluminate sessions and the reasons for this were varied (work commitments, technology issues etc). However, on a number of occasions the lecturers noted that students still accessed the recordings.

It appears that all the lecturers involved in this study revealed aspects of all three dimensions that Fullan and Stiegelbauer (1991) believe are at stake in implementing an innovation.

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Please cite as: Pelliccione, L., & Broadley, T. (2010). R U there yet? Using virtual classrooms to transform teaching practice. In C.H. Steel, M.J. Keppell, P. Gerbic & S. Housego (Eds.), *Curriculum, technology & transformation for an unknown future. Proceedings ascilite Sydney 2010* (pp.749-760).
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