Technology Advances in Virtual Classrooms (and how this affects learner engagement).

Kerry Trabinger
Education Design and Technology
Canberra Institute of Technology

As technology evolves and devices become more affordable there are many exciting possibilities for the use of innovative technology in virtual classrooms. However, while some of these innovations can encourage learner attention others afford learners more opportunities to multitask (task switch).

Keywords: virtual classroom, multitask, technology, learner engagement

Virtual Platform Improvements

Current virtual classroom platforms such as Adobe Connect are constantly improving, evolving and incorporating new and additional tools and plugins. Additional Adobe Connect tools currently available to assist engaging learner attention include the 'randomiser' (see Figure 1). This tool collects learner names from an attendee list and uses a randomised spinner to select one name. This encourages learners to remain engaged at all times as they are unable to anticipate when their names will be called. Adobe Connect also has a plug in tool available at an additional cost called the 'engagement metre' (see Figure 2). This tool is a quick way for teachers to view how engaged their learners are during the session.
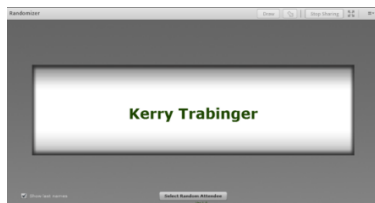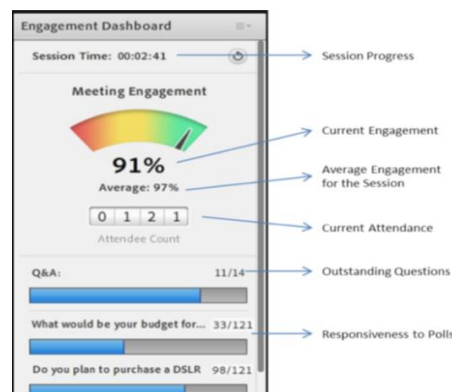

Figure 1: Adobe Connect Randomise.

Figure 2: Adobe Connect Engagement metre © Webqem 2014

Virtual Classrooms with Virtual Worlds

Some companies have developed a combination of virtual worlds and virtual classrooms. One such company is 3D Immersive Collaboration Consulting (3D ICC). This combination called 'Terf' includes the use of Adobe Connect and allows users to interact through video and audio in 3D Immersive environments with the use of avatars. See Figure 3.

Figure 3: Example of the use of 3D ICC ©2011-2016, 3D Immersive Collaboration Consulting.

Other Devices

Many virtual classroom platforms now afford teachers and learners the ability to participate on devices like smartphones and tablets. At the present time there is limited functionality available but this may increase in the future with advances in technology. A more recent mobile device is the Smart Watch. The Apple Smart Watch currently interacts with the WebEx platform but at this stage allows only very minimal interaction. Other possibilities for future use include learners' participation in a virtual classroom through smart televisions, fridge Wi-Fi LCD screens and even iPad Touch glass kitchen splashbacks.

Future Possibilities

Microsoft is exploring mood sensing advertisements using mood-recognition technology and claims the technology would be:

> a computer-implemented method to determine emotional states of users that receive advertisements on client devices, the method comprising: monitoring a user's online activity during the time period; receiving an indication of the user's reaction to the content; and assigning an emotional state to the user based on the tone of the content and the indication of the user's reaction to the content (Cavalli, 2011, p.1)

This application could be adapted to assist teachers in a virtual classroom understand if a learner is engaged and focused. The same applies to improvements in facial recognition software.

There are also many wearable cameras including Point of View glasses (POV) which are increasing in popularity as the costs reduce. The Canberra Institute of Technology teachers have used a USB microscope to display images using the webcam and it would be interesting to explore the use of these POV glasses in a virtual classroom.

Summary

While many of the above technologies can assist in focusing learner attention including plugins such as the randomiser and tools such as the engagement metre; mood gauges and facial recognition, other technology may afford learners more opportunities to multitask (task switch). For example, connecting through a mobile device could be detrimental as there is limited participation available on these devices. This also applies to learners participating via their smart watch, televisions, fridges or kitchen splashbacks. With the kitchen splashback, the very reason this device was created was to allow the use of this device while cooking and hence if a student was trying to participate in a virtual classroom session they would have to task switch between focusing on the content in the virtual classroom session and focusing on cooking. Similarly, with smart televisions many of these devices allow users to split displays and therefore afford the opportunity for learners to watch a television show or movie on one display while trying to participate in a virtual classroom on the other. This presentation will discuss the implications for teaching and learning in the virtual classroom of the future including tips for designing and delivering sessions that encourage learner attention and discourage multitasking (task switching).

References

Cavalli, E. (2011). Kinect-based mood analysis could bolster Microsoft's advertising efforts. *Digital Trends.* http://www.digitaltrends.com/cool-tech/kinect-based-mood-analysis-could-bolster-microsofts-advertising-efforts/

3D Immersive Collaboration Consulting. (2016). Terf Feature Summary. http://www.3dicc.com/product-details/

Trabinger, K. (2016). *Engaging Learner Interaction, Engagement and Attention in the Virtual classroom (an investigation into the phenomenon of multitasking)*. (Doctoral Dissertation, University of Southern Queensland). Retrieved from https://eprints.usq.edu.au/29694/1/Trabinger_2016_whole.pdf