Tech for teaching: five trends changing higher education

Gilly Salmon

More than 1,000 years of formal university learning and teaching does not change quickly, or without a struggle. But we are starting to see some key tech trends engaging staff and students – and therein lies the secret to change!

Here are five key trends emerging across the global higher education sector.

1. Mobility

As we move forward, higher education will become *increasingly mobile*, resulting in students carrying their university “in their pockets”.

Mobile computing devices (such as smartphones and tablets) are more affordable, more accessible and easier to use than desktop computers. It won’t be long before batteries will last for days with no *loss of efficiency*.

Mobile devices provide more than enough functionality to serve as a primary computing device for learning, and are purchased in their billions across the globe.

Tablets, in particular, are hugely popular. A *recent report in The Chronicle* shows the number of US college students with a tablet has more than tripled in the last 12 months.

In the past three to four years, the small, low-cost *software extensions* for these devices (apps) have been the *focus of development* in terms of diversity, quality and volume.

Apps are available for a wide variety of uses, such as providing access to *archived content* in university libraries and course materials – as the video below, from America’s Duke University, illustrates.

We will see many new and innovative education apps emerging very soon, and with them attempts by educators to embed those apps in their everyday teaching practices.

Even something as simple as being able to read course materials on the move (via a smartphone or tablet) has proven hugely beneficial.

Feeding into mobile universities is …

2. Connectivity

*Cloud computing* quietly unifies content and activity on the many devices people use in everyday life. Whether connecting at home, work, school, on the road or in social spaces, people increasingly rely on cloud computing to access their information and communities.

Connectivity has also become much more “aware”. The smartphone in our pocket knows where it is located and therefore where we are. These devices record our coordinates as we take photographs, talk to friends or post updates to social networking websites.

*UBC Library*

Cloud-based computing is making the embedding of computing gadgets of all kinds an essential part of our lives. Gradually, many educational applications will also rely on the cloud.

Learning design will increasingly take account of the potential for “learning locations” – in this sense, the world becomes the university campus.
Increasingly we’ll see location-based services utilised as a key learning tool in higher education. We’ll see the management student in a case-study location, the social worker in the community, the nurse in the hospital, the archaeologist in the field, still connected with university resources and a community of peer learners.

3. Openness

In the past few years we’ve seen an explosion of free, online educational resources, starting some ten years ago with MIT’s open courseware initiative.

Information is everywhere; the challenge is to make effective use of it for knowledge – and learning-creation.

Academics are beginning to explore new models that focus on embedding open resources while still protecting the academic value and acknowledging authorship.

One approach is that taken by Creative Commons, supplying easy-to-understand, “some rights reserved” licenses – an approach used by, among others, The Conversation.

In essence, content provided under such a license allows anyone to use the material however they like, providing they follow the guidelines created by the content provider.

Changhai Travis

University students are prolific. They create all the time “beyond the assignment”, often not realising they are learning.

They are simply enjoying the sharing and they are having fun. They know how to upload photographs, audio and video to the cloud.

Producing, classifying and interacting with these media has become just as important as the more passive tasks of searching, reading, watching and listening.

Universities are starting to understand how they can add real value to learning by using social media to provide a rich, engaging, two-way dialogue between their students and staff.

In the next few years we’ll see collaboration and contribution become increasingly open and fully engaged as a valid learning process.

4. Collective intelligence

“Crowdsourcing” is all about creating communities, usually temporary, to contribute ideas, links or materials that would otherwise remain undiscovered.

Crowdsourcing often fills in gaps that cannot be bridged by other means. In universities, this is currently taking the form of experimenting with massive open online courses, or MOOCs.

In the years to come we will see many more universities utilising social networking platforms to share information of common interest.

Ideas of “collective intelligence” are a big challenge to validated and accepted knowledge in universities, and traditional ways of teaching.

But increasingly academics are seeing the value of exploring crowdsourcing ideas for the future. Their students already do.

5. Virtual worlds

The furore about avatars in virtual worlds has died away a little. There was a time, just a few years ago, when commercial companies thought virtual worlds would be a place to promote and sell their products, such as cars or houses. In practice, this trend died away. But many educational institutions are still deploying avatars in new
Virtual world platforms that provide avatars with a space to interact are already available – including the well-known Second Life (see picture below) with more under development.

The majority of higher education institutions are undertaking projects in virtual spaces. In Second Life there are thousands of educational experiments available and actively underway.

Early projects drew heavily on copying the real-world, especially reproducing physical campuses, but practices have gradually given way to more experimental ventures.

These take advantage of the unique opportunities afforded by virtual worlds and other immersive digital environments.

For example, The Media Zoo at Leicester in the UK created ancient worlds for archaeology students to visit from the 21st Century. The same initiative enables psychology students to practise evacuation of an oil rig in the event of a fire, and offers virtual genetics laboratories to ease pressure on expensive physical labs.

As we move forward, we’ll see universities increasingly use virtual spaces with avatar students and teachers for innovative teaching, learning and research projects.

The virtual world will continue enabling us to do what cannot be done in the real world, providing platforms to best serve the learning need.

Professor Gilly Salmon was a member of the panel for NMC Technology Outlook > Australian Tertiary Education 2012-2017, which was launched on May 10, 2012. She would like to acknowledge the collaborative panel and process as an inspiration for this piece.