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A digital what? Creating a playspace to increase the quality of technology-enhanced teaching and learning

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This paper outlines a work in progress to create a shared learning space that will enable teaching staff to be exposed to a broad range of established and emerging digital technologies with the aim of increasing their digital literacy and self-efficacy levels so that technologies can be integrated into teaching practice. The project is a partnership between the Centre for Teaching and Learning, and the Library and will facilitate easy, supported access to technologies that individual teaching staff would not otherwise be able to experience. Premised on the importance of experiential learning to develop knowledge, skills and confidence the space will be designed for collaborative and play-based learning and development.

Keywords: barriers to adoption, emerging technology, digital literacy, teacher development

Introduction

To increase the quality of technology-enhanced teaching and learning, teaching staff must have the skills, confidence and technical ability to use technology in the teaching environment. This project is based on the premise that if teaching staff are to develop these skills they need access to technology in both a structured and unstructured way in order to discover, play and experiment with the outcome being confident use of technology in the teaching and learning environment. Through the creation of a "digital playspace" equipped with technologies that most individual departments or schools would not be able to justify or resource it is envisaged that teachers' digital literacy will be developed and this will lead to comfortable and confident use of technology in teaching.

The Vision

The project is a partnership between the university Centre for Teaching and Learning and the Library and will result in the creation of a space in the Library that is equipped with a range of established and emerging technologies including a wide range of mobile devices, a small-group optimized and physically shared digital workspace in the form of a digital table, a large scale video wall, with the possibility of virtual reality technology and other emerging technologies including wearables and gesture-based input-devices. This space will be used for both facilitated hands on training sessions with academic staff and for unstructured hands on play.

It is a widely held understanding (Buchanan, Sainter, & Saunders, 2013; MacCallum & Verhaart, 2014; Reid, 2014; Schneckenberg, 2010) that one of the barriers to technology adoption by academic staff is lack of access to the technology and this project sets out to begin to mitigate that barrier. MacCallum & Verhaart (2014) also found that lack of knowledge and skill was an impediment to teachers' use of mobile devices so as well as providing access to technologies, the goal is to develop teachers' self-efficacy in the use of modern digital technology in the classroom and beyond.

While similar collections of technologies are present in some individual departments, schools or service units these are for specific teams to use (e.g.: software development testing) and not widely known about across the institution. By creating the space in the Library access to the technology is facilitated and it will be seen as a University resource. As the aim of the institution is to "strengthen the University's leadership in digitally-mediated teaching and learning" (Massey University, 2014) it is critical that access to technology for learning and experimentation is made as open and easy as possible for staff. The Library is one of the few truly neutral spaces on campus, and therefore the logical place for a shared facility like this.

The space will be set up to allow for informal learning through play as well as facilitated small group

sessions led by staff from the Centre for Teaching and Learning to support teachers in understanding how the technology can be utilised to create enhanced learning experiences for students. Research (Reid, 2014) has shown that a mixture of formal and informal training seems to be the most effective in adoption of technology by teachers so allowing for learning through play, latent learning and exploration (Burghardt, 2012; Matthews & Liu, 2012; Meyer, 2012) is important to this project.

Planning

The project began in earnest at the beginning of 2015 and is due for completion to usable stage in August 2015. A key element in the planning has been establishing productive working relationships across the University between the Centre for Teaching and Learning and the Library primarily, but also the Information Technology section (for procurement of digital technology) and Facilities Management (construction and design work).

The physical space

As the vision for the playspace is to provide a, collaborative zone, free of expectation or judgment for faculty to engage with the technologies the design of the space is intentionally flexible and informal with no space intended for solitary work – similar to the Learning Studio at Abilene Christian University (Lemley, 2013).

The Library is the most logical place on campus for a facility like this however space in the Library is at a premium for students already so decisions around how the space can be designed so that precious student space is not lost have been critical. As the modern library role is changing from store for printed materials to shared learning space, planning has required thought about different pedagogies and learning experiences (Bennett, 2015).

Fit-out includes a range of informal, flexible seating options to allow for small group discussions and is designed for a very physical, hands on learning experience rather than traditional training delivery. It is expected that this approach will facilitate experiential learning and full engagement with the technology for the purposes of sparking re-imagination of teaching practice. (Cheers, Eng & Postle, 2012; Steel & Andrews, 2012).

The playspace is located near the current information commons and group study areas, so is an active zone of the building. The space will be open when not in use for staff development so that students can use the informal and formal seating as group study areas, and ultimately use the technologies in the space.

The technologies

The technologies going in to the space initially are a range of mobile devices, a digital table and video wall. Mobile device selection initially focused on tablet devices in a wide range of physical sizes and with Android, iOS and Windows operating systems all represented. A large number also included a high-resolution stylus input option. Devices will be provisioned with a small number of teaching and learning "apps", use of which will be included in the formal training sessions. Physical management will be by way of a dedicated charging/storage unit. An important factor in device selection (including brand) was internal experience with the device and the confidence to be able to provide technical support for the device internally or through established informal networks. Other factors for device selection included known compatibility with university network infrastructure and support and availability through preferred suppliers. Ongoing maintenance and support for devices and any specialist or non-standard “apps” will be the responsibility of educational technology staff within the CTL.

One of the key premises for the selection of what to put in the space initially was to create a zone that enables digitally mediated small-group collaboration and knowledge co-construction through physically shared digital workspaces and the digital table and video wall will allow for this. Content from devices can be shared to the wall on different screens or simultaneously over the whole wall (an advantage over the standard video projector option). Software initially installed on the table included modules to facilitate group brainstorming sessions, co-exploration of content and locations, and co-creation of presentations and free-form visual designs.

As of writing, plans are underway to purchase one or more virtual reality headsets and potential future additions include a 3D printer, wearables and gesture-based input-devices.

The use and support of the space

In the initial launch phase the space will be used by Centre for Teaching and Learning (CTL) staff to facilitate small group technology familiarisation sessions and to work with individuals on an as needed basis. The focus of such sessions will be on emphasising the importance of playing and experimentation with the technology to enable meaningful development of digital literacy skills in teachers. As the CTL staff are not physically situated in the Library these sessions will be pre-booked rather than drop in.

As more staff become comfortable and familiar with the technology it is envisaged that they will use the space with their students and with other colleagues, and ultimately students themselves will engage with the technology without facilitation.

The future

As with all investments of this sort planning for the future is critical to the success of the playspace as technology can quickly become outdated and/or unsupported. It is envisaged that the facilities provided in the playspace will be evaluated and technology added/removed/updated as part of the annual planning process (for both budgetary and project management reasons). As procurement can be a prolonged process a long lead time needs to be factored in for adjustments to the technologies provided, especially for additions. This process will be managed by the Centre for Teaching and Learning.

The playspace is being created on one of three geographically dispersed campuses so the success of the project will be carefully measured to determine whether similar facilities on other campuses are required.

Challenges and Risks

While providing access to technology is a barrier to adoption by academic staff, it is not the only one (Kirkwood, 2015; Reid, 2014) and there are significant risks with this project that unless the underlying support and engagement strategies are in place it will not have the desired effect – access alone is not sufficient to guarantee adoption.

A key challenge is getting engagement from teachers to use the space. Significant promotion and marketing of the space will be essential but it is also important that the right messages are coming from the university management at the highest level (Reid, 2014). The integration of technology into teaching and learning needs to be seen as a key direction for the entire institution through using a “joined-up” approach (Kirkwood, 2015) and this space is a key part of the process. In the current higher education environment of financial constraint, it is critical that this space is seen to be of strategic importance to the entire institution and not an underutilised space filled with expensive “toys” for a limited group of staff.

Support for the technologies is a challenge to be addressed, particularly for library staff. As the physical space will be open for student use when not booked there is concern that library staff will be asked to support the technologies when they are not confident themselves in the use of the technologies. Strategies to mitigate this risk range from running sessions for the library staff to develop the skills and knowledge they need, to locking the technologies down if needed. This is a challenge that will be best understood when the space is live and available and will be iteratively managed.

As the purpose of the space is to expose teachers to emerging technologies there is a challenge in future-proofing the investment and ensuring that it remains current. Digital technologies are evolving at such a rapid pace that selecting which technologies are showcased is challenging and will call for consistent financial investment in the space. The NMC Horizon Report (Johnson, Becker, Estrada, & Freeman, 2014) is one source that will be used to plan for future investment.

The digital playspace is a significant investment for the university, both in financial cost and also in time and space. It will become critical to be able to measure and demonstrate the success of the project and this is a challenge when much of the learning taking place may be informal or latent. Use of the space itself will be one measure, and ultimately the increased integration of digital technologies into teaching practice across the institution should be the clearest indicator of success.

Conclusion

Envisaged as an innovative environment to lift faculty digital literacy through formal and informal exposure to current and new technology, the ultimate aim of the digital playspace project is to enable confident use of technology by teachers in the classroom and beyond. Key challenges will be getting engagement from faculty and ensuring the resource is sustainable from both a technology and human resource perspective. The full benefits (or otherwise) of this project are, of course, yet to be realised as the true measure of success can only be observed over time.

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