SCHOLARSHIP OF TECHNOLOGY ENHANCED LEARNING

Implementing technology in science teaching – where are the gains?

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Abstract

When new technologies arrive, they come with promises to solve our problems. Technology has offered ways to get information faster, to communicate and collaborate synchronously, asynchronously. In our teaching, we have crafted online learning modules to affords flexibility for students so that they can engage with our disciplines outside of the confines of physical classrooms. Smart phone technology allows us to 'google' information (and misinformation) from anywhere - provided you have a smart device, a WIFI connection and a service provider that covers your location. In short, technologies have allowed us to work faster, and facilitated the expansion of the digital asset realm, and have served as catalysts for innovation and thinking differently about education. With the adoption of each technological implementation, I ask "where are the gains?" and "what are we losing?", particularly with respect to how we interact and collaborate with each other. I offer my reflections on three technologies that have impacted my academic practices, and participants will be invited to share their reflections in this interactive session.

Email: When I first started as an associate lecturer there was time to have a tea break in a tearoom. Email – now so ubiquitous - replaced the 'memo'. Something that was implemented for efficient communication has become overtly time consuming and administratively burdensome. The need for rich free-flowing incidental conversation in academia remains but the spaces in time to have these conversations has vanished. *On balance: initially a gain, more recently a loss.*

Internet: The World Wide Web started to gained traction in higher education in the mid-late 1990s. Teaching became 'blended' as many of us started to create digital learning resources for our students in 'flexible' learning environments. Hours were invested in converting analogue images and sound into digital assets. Analogue assessments were changed to fit the digital environment. Having students record their observations in scientific drawings was problematic. With Web 2.0 ($\sim$ 2000) came the rise of Learning Management Systems and it became easier to create, deliver and manage online quizzes. Scrutinising how students interacted with online resources became popular. Twenty years on and I rely on the online environment to teach, however I still cling to face-to-face teaching as I crave the conversations I have in class. *On balance: undecided.*

mApps: In 2012, I partnered with an undergraduate student and professional staff on a mApp – CampusFlora; which hit the AppStore in 2013 (Pettit et al., 2014). Designing an app in partnership with students (aligned with students-as-partners approach (Healey et al., 2014)) allowed us to become 'collaborators' rather than 'students' and 'staff' (Dimon et al., 2019). Here, technology acted as a collaboration catalyst shifted from academic-led learning design to student-staff co-design. *On balance: a gain.*

Developing digital literacy in our students is important - not just being able to use technology, but by fostering effective collaborations and by contributing to resource creation. Co-creating with students is now where I like to spend my time.

References

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SoTEL Symposium 16-18 February 2022

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