Review of Key Competencies in the Knowledge Society Conference 2010: E-learning and computer competency research in the age of social media

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In September 2010, I attended the Key Competencies in the Knowledge Society (KCKS) conference, held as part of the International Federation for Information Processing World Computer Congress (WCC) in Brisbane, Australia. The WCC is held every two years in a host nation and was organised by the Australian Computer Society. The uniqueness of this conference is the mix of commercial and corporate sectors, non-profit organisations, government departments, schools and academic researchers from many countries who present academic and commercial research.

My key observation of the conference was that social media and technological devices are educational tools now becoming indispensable for learning and acquiring information and knowledge. With the large array of Web 2.0 tools currently in existence students are now authors of content in their learning (Gray et al., 2010). The issue of how to develop competent skills to use Web 2.0 tools in this fashion was the central concern of the researchers at the conference.

Understanding and Defining Key Information Technology Competency Skills

A core theme at the conference was how to teach computer skills effectively, especially internet and Web 2.0 use skills, to a growing audience of students, some of them first-time information technology users. Newer users included older adults over 50 years of age (Nycyk & Redsell, 2010), teachers unfamiliar with information technologies (Carvalho, 2010) and high school students with learning or personal life difficulties (Jones & Wilkie, 2010). All these studies aimed to maximise the user's chances for developing key information technology competencies to continue learning in the fast emerging digital education environment.

Digital divide literature recognises not just computer access inequality issues, but skill training issues such as the ability to acquire digital literacy with supportive training (The Smith Family, 2008) which give the user the necessary social support when undertaking computer skilling (Buré, 2006) and the ability to select and use internet information in a critical and discerning way to assess its relevance to the user's goals (Van Dijk & Hacker, 2003). Presenters recognised these themes and reported on different strategies for continuing digital literacy acquisition through computer skills education. For example both Leahy and Dolan (2010) and Dörge (2010) theorised that while—because it is constantly changing—it is difficult to clearly define digital literacy, it is possible to map a skills set that is currently needed by all students using computers for digital learning.

Leahy and Dolan (2010) argued that to take advantage of the knowledge society and achieve what is termed 'eInclusion', a set of competencies should be available to be learnt, in this case, by European citizens. They highlighted the link between digital literacy, competency and social exclusion. If citizens do not learn computer skills a gap can develop that will disadvantages citizens if this means that they cannot effectively use digital technologies. Social exclusion is a lack or denial of resources and an inability to participate in activities that are available to others (Age Concern, 2010). The ability to access educational resources is a crucial element of social inclusion. The following skills are those required identified by Leahy and Dolan (2010, p 218) as a minimum to participate in a digital environment:

- Searching for information, locating it and identifying valid information;
- To know how to connect to any type of internet network;
- Send emails, reply to emails and send attachments;
- Have an awareness of security and ethical issues in using computer technology;
- Using hardware such as printers, MP3 players and new devices to come; and
- The importance of accessing and using any learning resources on networks.

Dörge (2010) asked how do society and technology educators define what are the skills, competences and qualifications that are required to be included? She co-presented a second paper with Diethelm that illustrated the complexity of designing digital education and argued that the context of the material, what is being learnt and how it is being learnt, should inform the understanding and definition of competency (Diethelm & Dörge, 2010).

This part of the conference challenged the audience to consider the complexities of learning and assessing digital education competencies. How are digital educators going to measure what is meant by the acquisition of a skill? How will the learner be deemed competent to use it?

Issues in Using Social Media as Learning Tools
The second major theme researchers presented was the ever-growing use of social media and Web 2.0 platforms in the digital education field. An abundance of literature shows how and why social media is used. However, the researchers presented studies that argued there is a case for integrating these platforms effectively into pedagogical contexts in order to disseminate information and support learning.

Twitter was suggested as a technology that can enhance learning by information finding and encouraging collaboration among students. Twitter was suggested as an example of a social media platform that "has also been instrumental in changing the way people exchange information, links and their engagement with social media in general" (Ebner et al., 2010, p. 103). As Twitter can function as an information or knowledge source it can link to vital and important research and knowledge—despite the otherwise short (140 character) messages. Their study suggested that conferences, where much information is shared, can have content shared with the wider community through Twitter comments and links. Though they argued it might be less useful for non-conference participants, the potential is there for sharing information which is yet to be fully researched and understood how this can be useful (Ebner et. al, 2010).

The second paper by this group of researchers gave a roadmap of how this platform can be used successfully in educational settings. Their argument rested strongly on showing how to behave on Twitter and how it is possible to build informal but potentially powerful learning and knowledge sharing networks. Their conclusion was that Twitter can effectively connect students to each other and to other experts and researchers in the students' fields of study (Reinhardt, Wheeler and Ebner, 2010). The consensus in the discussions following this presentation was that microblogging (such as Twitter) should be viewed as a platform to stimulate discussions with a firm set of rules to operate in such an environment.

The use of Wiki Social Media Tool as a learning channel to support digital education was also discussed. The presentation by Krebs et al. (2010) critically evaluated the appropriateness of wikis and blogs for digital education. Their argument took a different approach because the wiki is often an informative and reflective tool. Their research demonstrated that the motivation of students to use wikis for learning was of key importance for the successful integration of wikis into classroom activities. They argued

that if students are given clearl boundaries and the choice to design the wiki and information content themselves, then their motivation to contribute to the wiki is higher.

Zammit (2010) conceptualized the wiki as a collaborative writing tool, but similarly argued that the construction of a wiki empowered students as they were able to choose the information content and how the wiki will be presented. Her research discussed how wikis had given primary school students in her study an opportunity to engage with social media responsibly and had provided opportunities for learning and collaboration. Zammit also reported how the primary school students involved in the wiki project had liked being able to add to the wiki at home or another location.

Digital educators are still exploring how to successfully use social media in classrooms and curriculum. It is clear that the tools exist to incorporate social media into pedagogical practice a constructive way. Yet, as this conference has demonstrated, what is lacking are social frameworks and boundaries such as personal etiquette to guide the way users behave in this collaborative environments.

One presentation also dealt with a key issue that is often ignored or sidelined in discussions of social media in educational contexts—the level of proficiencies with social media that was required before undertaking the learning. In Judd, Kennedy and Cropper's (2010) study of the use of wikis in classrooms, the wiki technology was only introduced after a considerable amount of time was spent designing how the wiki would be used. They reported that support was given before and during the wiki assessment. This meant the students were accustomed to the new technology before submitting their assessment.

Designing Effective Information Systems to Support Digital Education

Other presenters focused on issues concerning how existing information technology systems can be improved—and new ones created—to support digital education. An area of growing concern is a shift towards undertaking formal course exams by computer rather than paper and pen written exams and what systems can support a fair and equal written exam process. Although e-learning assessment has become common place e-exams pose a challenge to traditional assessment practices.

A comprehensive study by Fluck (2010) covered the trial of e-examinations in Tasmania, Australia comprehensively. The paper covered the barriers to acceptance of this type of assessment and the problems that it may face in the exam room (for example, the constant typing may be a distraction to the candidate). Fluck argued that to support the e-examinations the available infrastructure must be flawless and efficient, even technical problems as minor as a server issue might require students to retype lost work. The use of USB sticks which have the required software and questions was one innovative solution that was put forward to ensure e-examinations were carried out correctly.

It was recognised that the importance of digital education was still not universally recognised and supported. For example, Hadjerrouit (2010) noted that digital literacy resources still meet with some resistance from teachers in the classroom environment. Such resources, such as electronic textbooks for reading and wiki's for information sharing, can be complex to implement as teachers struggle to learn how to use the systems the resources are embedded in. This theme of digital education systems management was discussed by Tarrago and Wilson (2010). Their overall argument is leadership is a key component in encouraging acceptance of digital education systems worldwide.

Conclusions of Conference and Implications for Digital Education

The KCKS conference had one overarching message; the area of e-Learning and digital education is moving and expanding rapidly, yet educators in these fields are still learning how to develop and manage these systems. All the presentations concerned themselves with how to use and improve what is currently on offer in digital environments. It is not a matter—as one audience member pointed out—of being *forced* to use social media or digital resources. Certainly the benefits of mastering such resources bring positive results such as social inclusion in a networked word and the ability to learn further skills as society and one's own needs change. This research reported on at KCKS suggests digital education researchers and practitioners have a important role in establishing the legitimacy of the learning and literacy potentials of everyday digital technologies—a positive take-away message from the four-day conference.

The implications of the presentations all pointed towards the fact that education researchers and teaching professionals are only beginning to understand the consequences of using technological systems in any educational institution or learning setting, formal or informal. In a previous review in this journal, Gurmit Singh (2009) called for a need to understand the broader social concerns such as how e-learning can drive education toward social equality. At the KCKS conference presenters tended to focus on the micro-detail of their research projects. However, a large number of presentations also substantively addressed the inequalities learners may encounter through age, illness, illiteracy, income levels and learning difficulties.

Summary

The key lesson emerging from the conference for digital educators and those using digital technologies is that the generally fast-paced uptake will continually bring new challenges and problems. These will require researchers and practitioners to explore how to use such resources and systems responsibly to create socially inclusive learning environments. The latter point was addressed positively, and many strategies for introducing digital education in contexts where educational inequalities exist were put forward and discussed. There is much work to do to in this area but the KCKS conference demonstrates that this process is now being considered and addressed.

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