Chapter 14

“You Can Lead the Horse to Water, but ... ”: Aligning Learning and Teaching in a Web 2.0 Context and Beyond

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ABSTRACT

This chapter outlines the potential benefits of incorporating Web 2.0 technologies in a contemporary higher education context, and identifies possible ways of doing this, as well as expected challenges. It uses the University of Southern Queensland (USQ), primarily a distance education provider, as the context for many of its case study examples. In particular, it addresses the important role of the allowances of particular learning management systems (LMSs) in pedagogical applications of Web 2.0 technologies. Overall, this chapter argues that the goals and ideals of Web 2.0/Pedagogy 2.0 can be achieved, or at least stimulated, within an institutional LMS environment, as long as the LMS environment is in alignment with such goals and ideals. It uses the implementation of Moodle at USQ as a case study to reinforce this argument and explore which factors potentially influence a shift in thinking about learning and teaching in a Web 2.0 context.

INTRODUCTION

Collectively, Web 2.0 technologies constitute a major conceptual shift in the way the Web is used. Two central concepts within this shift are collective intelligence and user participation, as these have seriously blurred the boundaries between knowledge management and dissemination.

From a learning and teaching perspective, Web 2.0 technologies offer a variety of opportunities in terms of what such technologies *could* be used for, and in many cases already *are*, by a new generation of students entering universities. The challenge from a higher education perspective is to align what students are already doing with technologies with how they are being taught, without blurring the boundaries between “private” and

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“educational” spaces to the point where students become disengaged. How students already use Web 2.0 technologies and social software tools, particularly with regards to social networking and user participation, are to an important extent driven by the affordances of the technologies themselves. However, such affordances do not necessarily predict the type of teaching practices that could be adopted by universities to exploit their potential. Aligning learning and teaching in ways that suit a Web 2.0 context implies a major shift in thinking about knowledge creation and dissemination, and thus about pedagogy. It requires a conceptual shift from thinking about the Web as a method of communication, to thinking about it as a method of education, and thus of knowledge creation and dissemination. Almost a decade ago, Dreyfus (2001) pointed out that much of the transformation driven by the Internet in general constitutes a transformation in the “*method of communication*” (p. 30, emphasis added). This in turn led him to question, “What proposed *method of education* generates all this excitement?” (p. 30, emphasis added). Although Web 2.0 technologies have largely developed after Dreyfus posed this question, it is still an urgent question in the current context, and one that directly relates to the types of learning environments we use in contemporary university contexts. While many current learning management systems (LMSs) could be seen as largely text-based (Wuensch, Shahnaz, Ozan, Kishore, & Tabrizi, 2008), and too inflexible to allow for Pedagogy 2.0 (McLoughlin & Lee, 2008; see also Chapter 3 in this book), more recently, LMSs have been developed that are potentially far better equipped to address changing learning needs in a Web 2.0 context. This ability has been further enhanced by the extended functionality that some LMSs provide to extend their core environments with additional, and in some cases, third-party, applications.

Moodle is an example of an LMS that appears to be well suited to address learning and teaching needs in a Web 2.0 context, and affords

the potential to think about the Web as a method of education, as it is essentially based on an open source philosophy of co-construction of knowledge. However, feedback to date suggests that many university teachers merely use it as a traditional method of communication, or as a way to disseminate existing content. In this chapter, it is argued that the goals and ideals of Web 2.0/ Pedagogy 2.0 can be achieved, or at least stimulated, within an institutional LMS environment, as long as the LMS environment is in alignment with similar goals and ideals. However, this requires universities to resist the temptation to rigidly close the “wall around the garden,” which is a long-established practice to control and manage all aspects of the student experience, and is difficult to change. This chapter uses the implementation of Moodle at the University of Southern Queensland (USQ) as a case study to reinforce this argument and explore which factors potentially influence a shift in thinking about learning and teaching in a Web 2.0 context. The chapter addresses issues of institutional change, and asks, “What would encourage institutions of higher education to adopt Web 2.0 tools and pedagogies?”—or, in other words, “What would make the horse drink?”

WEB 2.0, GENERATION Y, AND E-LEARNING

Collectively, Web 2.0 technologies constitute a major shift in the way the Web is used (Boyd, 2008). More importantly, from an educational perspective, Web 2.0 technologies offer major opportunities for the way in which they *could* be used. This is not to say that the technology necessarily drives these changes in a technologically determinist sense, but rather that educators could potentially capitalize on the ways in which these technologies are already being used by Generation Y, and appropriate and guide this usage in particular directions. This is rather different than arguing that Generation Y is completely distinct

from previous generations (Prensky, 2001) and therefore needs a completely new approach (see also Chapter 16 in this book). In recent years, much has been written about this generation, which is variously referred to as “Generation Y,” the “Net Generation” (Oblinger & Oblinger, 2005), “digital natives” (Prensky, 2001), and “Generation V” (where “v” is for “virtual”) (Havenstein, 2007), and which is characterized by having grown up in a “technology-saturated” environment. Particular sets of characteristics are ascribed to such a generation, which in turn makes it tempting to call for a complete overhaul of the way we teach such a generation of students in response to those characteristics. For example, Barnes, Marateo, and Ferris (2007) note that the Net Generation “needs” active, engaged learning experiences (as they get easily bored); self-directed learning opportunities; immediacy; interactivity; experiential learning; and above all, opportunities for social interaction (see also Oblinger & Oblinger, 2005). It is not difficult to see parallels between these perceived “needs” and what a Web 2.0 environment appears to be able to offer. More recently, however, more nuanced critiques have begun to challenge calls for complete and radical transformation into doubt (Kennedy, Judd, Churchward, Gray, & Krause, 2008; Huijser, 2006), while accepting the need to address changing student characteristics.

According to Batson (2008), “The most significant fact about Web 2.0 for educators is that key functions and intelligence have moved or are moving from the desktop to the Web, and by doing so they have changed” (para. 1). He stresses the social implications of this movement: “Those functions and intelligence are no longer just about personal productivity, but about the social context for information—what *other* people think about the information” (para. 1, emphasis in original). de Byl and Taylor (2007) focus on this social context by referring to a “Web 2.0 ethos centering on the idea of a collective intelligence which evolved from hyper-linking, web services, platform-independent software, re-usable and re-mixable

content and, above all, user participation” (p. 110). The two central concepts here are collective intelligence and user participation, as these have eroded the boundaries between knowledge management and dissemination. As Batson (2008) states, “If we accept that all learning is social, Web 2.0 may be more in step with learning reality than the book or the PC” (para. 2). Clearly, the development of a Web 2.0 ethos is, to an important extent, driven by the affordances of the technologies themselves. Whether it is a wiki, a blog, or a photo-sharing site like Flickr, the ways in which each of these is structured invites certain uses, which are all social in nature. However, once the technologies are available, the ways in which they will actually be used, and the extent to which they will be used, are firstly not always predictable, and secondly not always desirable from a pedagogical point of view. In other words, it is important to resist the temptation to follow unquestioningly what Generation V (Havenstein, 2007) does, under the guise of “student centeredness,” without carefully considering what members of this generation (and others!) *should* be able to do upon completion of their tertiary course or qualification.

Recently, as mentioned above, empirical research is beginning to appear that challenges common assumptions associated with Generation Y, V, or Net (Kvavik, 2005; Kennedy et al., 2008; see also Chapter 16), assumptions that often identify potential Web 2.0 applications and uses from a theoretical perspective rather than an empirical one (Leslie & Murphy, 2008). While such empirical studies confirm that Generation Y has grown up in an environment “saturated” by technology, they also suggest that there is much variation with regards to types of use, associated skills, and preferences for use in education. A recent Australian study by Kennedy et al. (2008, p. 108) shows that “many first year students are highly tech-savvy. However, when one moves beyond entrenched technologies and tools (e.g. computers, mobile phones, email), the patterns of access and use of a range of other technolo-

gies show considerable variation.” For example, while Kennedy et al. found a significant growth in students’ general use of instant messaging, blogs, and podcasting, they also found that the majority of students rarely or never used these technologies for study, and importantly, “the transfer from a social or entertainment technology to a learning technology is neither automatic nor guaranteed” (p. 119). In terms of educational applications, this has significant implications for rural or regional universities such as USQ, with geographically dispersed student populations, many of whom study in distance mode and therefore do not know each other offline.

Overall, then, the onus is on universities to clearly define coherent strategies to align the already existing skills of Generation Y with learning objectives and outcomes based on providing tools for meaningful knowledge creation and dissemination suited to a Web 2.0 context on the road to “Web 3.0” (Alexander, 2008; see also Chapter 20 in this book). The authors of the 2008 *Horizon report* (New Media Consortium, 2008) note that Web 2.0 technologies allow for the creation of “collective knowledge stores” (p. 23), where the “data are not organized in the traditional sense, and indeed it is in part the unstructured nature of collective intelligence which allows it to be created and mined in ways that often lead to multiple levels of new insights” (p. 23). Similarly, Unsworth (2008) argues that what universities should recognize in the emergence of Web 2.0 is “a shift in emphasis from the computer as platform to the network as platform, from hardware to data, from the wisdom of the expert to the wisdom of crowds, and from fixity to remixability” (p. 227). Of course, there is a sense of inevitability in descriptions like these, and a lack of recognition that this is essentially contested territory, which is echoed in a recent report entitled *Harnessing technology* (Chowcat, Phillips, Popham, & Jones, 2008), when the authors argue that “If education does not develop ... [Web 2.0-based] personalized services, others may do so” (p. 26), referring

to increasingly closer links between commercial and educational applications of technology. The challenge for universities is therefore twofold: on the one hand they are required to address the question of access, and on the other hand they are required to devise strategies to teach students to engage with these new insights in meaningful ways. To confront this challenge requires experimentation with educational applications of Web 2.0 technologies based on sound pedagogical principles. It is important to keep in mind, however, that this kind of experimentation is difficult “when the technology that is being evaluated goes rapidly out of date” (Chowcat et al., 2008, p. 27). In short, there is a very real danger of “jumping on the bandwagon” and pressure to do so should put the focus back on pedagogical principles and outcomes as a starting point.

McLoughlin and Lee (2008) have made a useful attempt to define such principles under the banner of “Pedagogy 2.0,” which they define as follows: “Pedagogy 2.0 integrates Web 2.0 tools that support knowledge sharing, peer-to-peer networking, and access to a global audience with socioconstructivist learning approaches to facilitate greater learner autonomy, agency, and personalization” (para. 2). Importantly, they also identify the main challenge as enabling “self-direction, knowledge building, and learner control by offering flexible options for students to engage in learning that is authentic and relevant to their needs and to those of the networked society *while still providing necessary structure and scaffolding*” (“New forms of participation: How social software tools empower users,” para. 3, emphasis added). It is the latter that presents the biggest challenge, and goes to the heart of the discussion in this chapter, because it forces the spotlight on a potential contradiction between “open” (Web 2.0) and “walled” (or “managed”) learning systems. In short, it creates unease, because it demands a major shift in the way we think about the role of the teacher or instructor, and indeed about the level of teacher control over the learning process. This, in

turn, has implications that impact on every aspect of many traditional organizational structures of universities, according to which the teacher assesses, judges, and evaluates (and thus “controls”) student learning outcomes. Ultimately, this is a fundamental way in which individual universities build and maintain their reputations. As Geith (2008) notes, “measuring, valuing, and recognizing learner performance remains an exclusive function inside formal education systems” (p. 224). Pedagogy 2.0, by contrast, increases “the level of collaboration with experts and peer groups and ... [connects] students to an emerging global network or ‘architecture of participation’ that transcends the walls of the institution” (McLoughlin & Lee, 2008, “Pedagogy 2.0: Teaching and learning for the knowledge age,” para. 5). The role of teachers or instructors in this context becomes one of working “collaboratively with learners to review, edit, and apply quality assurance mechanisms to student work while also drawing on input from the wider community outside the classroom or institution” (McLoughlin & Lee, 2008, “Challenges in implementing of Pedagogy 2.0,” para. 1). This is therefore the main challenge, and to do it successfully requires a series of adjustments within institutions that have historically been resistant and slow at adapting to major changes (Henshaw, 2008).

CHANGING PRACTICES IN PEDAGOGY AND INSTITUTIONAL USE OF TECHNOLOGIES

The required changes relate to institution-level changes, as well as changes to the ways in which individual teachers conceptualize their function, and ultimately the ways in which they approach knowledge creation and dissemination. To begin with the latter, Geith (2008) identifies the emergence, in a Web 2.0 context, of an abundance of what she calls “credentialing options focused on the performance of the learner outside the walls of

formal education” (p. 225). This, in turn, leads to a context where learners and teachers are “freed from constraints imposed by a scarcity of expertise and a scarcity of learning resources” (p. 225). Again, to accept this in principle, as a university teacher, requires a level of comfort with relinquishing control that is likely to take a significant amount of time to develop for a large percentage of those teachers, as it upsets their perceived *raison d’être* in fundamental ways. Furthermore, to negotiate the levels of “outside” and “inside” expertise and integrate these in flexible ways in their teaching necessitates an in-depth understanding of the Web 2.0 environment, as well as continuous updating of such knowledge and perhaps a degree of immersion in such an environment, which is another challenge for an ageing university workforce of “digital immigrants.” Mabrito and Medley (2008) note, for example, that “while N-Gens interact with the world through multimedia, online social networking, and routine multitasking, their professors tend to approach learning linearly, one task at a time, and as an individual activity that is centered largely around printed text” (“The challenge of Net-Generation learners,” para. 1). To prepare teachers for Pedagogy 2.0 would therefore call for “a tremendous amount of institutional support” (Mabrito & Medley, 2008, “Pedagogy for the N-Gen student,” para. 3). Furthermore, it would require a flexible, “whole-of-institution” approach (Taylor, 2001), where universities are traditionally monolithic systems that in practice tend to be “less flexible and ultimately less innovative than the granular and remixable information services now often called Web 2.0” (Unsworth, 2008, p. 229). While this may sound rather fatalistic, it is not to suggest that there are no ways forward. Universities need to find ways and learning systems that allow for a balance between commercial imperatives and pedagogical strategies and outcomes.

There are already many instances of individual teachers taking advantage of the increasing availability of “ubiquitous, free, and efficient online collaboration tools for teaching and learning”

(Hargis & Wilcox, 2008, p. 9), for example through innovative uses of blogs (Bruns & Jacobs, 2006) and by incorporating Web 2.0 environments like Wikiversity (<http://en.wikiversity.org/>) (Friesen & Hopkins, 2008), social networking sites (Boyd, 2008), or Second Life (SL) (Kelton, 2007), among many others. The emphasis in these instances is on the openness and searchability of such tools and environments, which contrasts sharply with virtual learning environments consisting solely of students and their teacher, which are unable to take advantage of network effects (Alexander, 2008) and thereby risk becoming irrelevant. As noted above, however, empirical evidence is beginning to suggest that the role of the teacher and sound pedagogical principles are vital in such environments for learning to occur. For example, in their study of blogging for instructional purposes, Leslie and Murphy (2008) found that students did not move beyond low-level information sharing, nor engage in knowledge construction, which they attributed to a lack of teacher presence. In short, what students lacked in this context was what teachers traditionally offer: the design of the educational experience, the facilitation of that experience, and subject matter expertise (p. 10). These results are echoed by Reynard (2008), who identifies the "5 most common mistakes in using blogs with students."

What this research suggests is a need for an LMS that is characterized by openness and searchability, but at the same time provides a consistent environment and adequate institutional support for professional development of teachers to allow them to take full advantage of the possibilities that Web 2.0 applications offer, based on sound pedagogical principles. At USQ, Moodle has recently been implemented, based on the expectation that it will deliver an LMS that allows teachers to take advantage of openness and searchability of Web 2.0 tools and environments, while maintaining a level of control and "scaffolded safety" in which to learn how to take full advantage of such an environment.

WEB 2.0, TRADITIONAL LMS, AND OPEN SOURCE (MOODLE)

The more recent generations of LMSs, particularly the open source systems such as Moodle, have begun to recognize the need for the ability to socially engage participants in greater ways than was provided through the use of threaded discussions and email notifications in earlier generations of LMSs. The ability to network, usually with other students, and the development of personal learning environments (PLEs), have now become a much higher priority (Dron & Bhattacharya, 2007). However, universities have struggled with this need to provide equivalent open access, or "freedom," to their Internet-based systems, a freedom individuals are accustomed to when using a private ISP (Internet Service Provider).

This dilemma for universities has primarily been due—and for good reasons—to the security implications of providing access to secure or privileged information, such as information about an individual's identity and copyrighted materials. This is where the newer generations of open source LMSs begin to gain credibility and are seen to be, in part, the answer to this dilemma for the institution. Not only do they, like earlier versions, allow secure access to a particular learning environment, but they also allow the creation, in some cases by using additional applications, of social networking environments (SNEs) and PLEs for students, spaces that can potentially also be shared with the wider world. In many cases these environments also allow students to create quite extensive profiles for themselves, and they allow them to choose how they will receive and distribute a range of communication services. In Moodle, for example, students can, within their profiles, add their own pictures, choose to have communications feeds or syndicated links to other environments, participate in one-on-one or group chat sessions with students online, create personal blogs, link to other online spaces, and choose (within limits) the way their environment

will appear. Much of this information within their profile can then also be shared with their more extensive PLE either within the LMS or by using an additional application, like an e-portfolio. (See also Chapters 5, 15, and 16 in this book.)

These PLEs and SNEs are usually housed within the confines of the university but stand separate from the traditional course/subject or program environment, thus providing a level of independence to students to personalize their learning experiences. Attwell (2007) believes that the introduction of PLEs can in fact “bridge the walled gardens of the educational institutions with the worlds outside” (p. 7), tying together a range of context-specific sources of information aggregated or syndicated from other environments, thereby creating a more meaningful learning environment based on the individual’s educational needs.

However, while suggesting this “open” approach, this chapter is at the same time advocating, at least in part, the existence of a “walled garden” as the most appropriate place in which to house a formal online learning environment. There are several reasons for this. Firstly, the new-generation LMSs are flexible and more robust than those of previous generations. Secondly, and for reasons already mentioned, sometimes privacy is appropriate, especially in an educational context. As Feldstein (2006) suggests, this is for the same reason we like to have the option of closing the door to a physical classroom. Teaching is about trust, and if we want our students to take risks then we have to be able to provide an environment in which it is initially safe for them to do so. For once outside the wall, “the wilderness contains sites that may reveal or misuse personal details, malicious crackers and hackers, uncredentialled strangers and technologies of uncertain reliability or longevity” (Dron & Bhattacharya, 2007, p. 895).

This is not to suggest that there are not times when we would want our students to take risks in the wider world or “wilderness” beyond the walls

of the university, its classrooms and its systems. On the contrary, one of the most important learning objectives in a Pedagogy 2.0 context is precisely to teach students how to negotiate a Web 2.0 environment confidently, productively, and safely. Feldstein (2006, para. 1) also states that

A good learning environment should enable faculty to password-protect course content but not require it. Further, it should not favor password-protection, encouraging teachers to explore the spectrum between public and private learning experiences. (emphasis in original)

Moreover, choosing best practices is about academic freedom, and while the tools are important, they should not dictate this choice. Ultimately, however, the university does require the ability to use copyrighted material legally within their courses at their discretion. Currently, and at least for the foreseeable future, the only legal place it can do this is behind some form of wall, where students can rely upon the resources provided by the teaching staff (Dron & Bhattacharya, 2007) as students “still see faculty knowledge and expertise as the most important element in learning” (Thompson, 2007, p. 2). Moreover, Barnes et al. (2007, “Conclusion,” para. 1) link this directly to the responsibilities of educators, by arguing that

educators must not abdicate their role as authorities directing the learning experiences of their students. ... [There is] a fine line: Educators should continue to find ways to exploit the skills students develop outside of class without accommodating the habits of instant gratification and shallow thinking.

The more compelling argument, and the third reason for choosing this approach, is about the enabling aspects of providing such spaces within which for students to learn. This is what we might call an ontological stance—“ontology” in this

context meaning that which gives a framework, or seeks to explain why we do what we do in different situations to address diversity within our student cohorts—and it is one that, until recently, has been difficult to adopt and realize, mainly due to the limitations of LMSs. However, this more “closed” approach can now be taken for more pragmatic reasons. Shadbolt, Gibbins, Glaser, Harris, and Schraefel (2004) state that their

choice of a single ontology for the system reduces the amount of translation required. Information from external sources (which may have been expressed in other ontologies) still needs to be translated into the system ontology, creating a “walled garden” in which it is easier to work. (p. 5)

The alternative to this is, as Shadbolt et al. (2004) suggest, is “an open approach that might figuratively be described as a meadow in which many ontologies bloom” (p. 45), leading inevitably to a number of heterogeneous ontologies being used, possibly concurrently, throughout the chosen system or schema, which then potentially leads to a fragmented learning experience. This “open” approach runs the risk of unnecessarily overcomplicating the design of the learning experience, as the implication is that each of the individual components must be either translated, or mediated, between each of the individual systems. In addition, and usually as an unforeseen consequence of this, the ontologies associated with each experience may well have mutual inconsistencies, inevitably raising “the cost of deciding upon appropriate mappings between ontologies or ontology fragments” (Shadbolt et al., 2004, p. 45). In practice, this potentially means that a student studying four courses in a semester may be required to negotiate a multiplicity of different environments, potentially having to reorient him or herself and learn to deal with a new way of doing things each semester.

“SAFE” VS. “OPEN” VIRTUAL LEARNING SPACES: PEDAGOGICAL AND INSTITUTIONAL IMPLICATIONS

The main concern with the “open” approach described above is that students, in having to cope with new or different ways of doing things, may be subject to additional and possibly unnecessary cognitive load, as opposed to using this capacity to focus on the actual learning that is required (Dror, 2008). This concern relates primarily to the ontology of Web 2.0 technologies and social software that is “based on the idea of ‘small pieces, loosely connected’ utilising commonly recognised standards and web services for linking ideas, knowledge and artefacts” (Attwell, 2007, p. 5). This may not be a problem for competent students, but for those who might be considered “on the edge,” this strategy can increase the amount of mental stress associated with study (Kalyuga, 2007). Shadbolt et al. (2004) reinforce this when they suggest that in taking this temporal (open) approach, “there is a higher cognitive load on the user to remember the relevant previous information” (p. 46). Thus, this raises a question of whether this load should be scaffolded instead, which would imply a less “open” environment, at least initially. (See also McLoughlin & Lee, 2010.)

The “open” approach may be sustainable where it is employed occasionally and when the context is appropriate, but once it is adopted more widely or for novelty (e.g., to do “something different”) serious planning across the program is advised. However, if such an “open” approach can be used in conjunction with, or mediated by, an LMS such as Moodle and/or a PLE, it has the potential to provide a coordinated suite of information allowing users to focus their energies on knowledge building, “rather than on splitting their attention, and hence increasing cognitive load, between remembering which instance was next to another while focusing on the detail of a current selection” (Shadbolt et al., 2004, p. 46). Dror (2008) states that by adopting this approach, “one can considerably

reduce cognitive load by tailoring the learning to the architecture of cognition” (p. 218).

Overall, Dron and Bhattacharya (2007) suggest the following 10 considerations when considering going outside the LMS. They are presented here from a USQ-contextualized perspective, and include both pedagogical and institutional considerations:

1. *Technical problems:* These manifest themselves in a number of ways. From a user perspective this may include using environments that use voice and/or video applications requiring plugins and download capabilities greater than some students have access to. Most universities have adequate computing standards to which staff are expected to adhere, but once outside the university’s systems there is little or no control over this. From the university’s standpoint, security issues can also arise from staff (and students) accessing sites that use protocols unacceptable to the infrastructure, particularly when these are accessed from within the university’s systems. This has led USQ to develop a series of “minimum standards” for the delivery of electronic course materials, along with a range of alternative delivery options for those who have access problems/restrictions, or no Internet access at all.
2. *Clashing cultures:* As traditional hierarchies or more “traditional” ways of teaching exist in many courses/subjects, tensions can arise if a “whole-of-program” approach is not adopted for the use of new technologies or “ways of doing things.” Particularly at USQ, with its strong distance education focus, staff may come to the university having taught in very different contexts (e.g., primarily in face-to-face mode). This may lead to students becoming dissatisfied with staff and staff being dissatisfied with fellow staff pushing the boundaries in isolation. In other words, consultation to overcome the issue of isolated pockets of innovation is recommended for those wishing to extend their school, department, or discipline in new directions.
3. *Technophobia:* This looms large for both students and staff, as part of a natural resistance to change. In some extreme cases, staff do not even use online discussion forums for their students, which is problematic in USQ’s institutional context where 80% of students are never physically on campus. In addition, the high proportion of non-traditional students, many of whom are mature aged people returning to formal study after extended periods of time, means that adopting too many “new ways of doing things” too quickly—particularly with Web 2.0 technologies—can be off putting. However, if these tools can be integrated within the “walled garden” then some monitoring and support can be provided for those who may be struggling. Again a staged, program-focused approach is recommended.
4. *Loss of monitoring:* In many cases the use of Web 2.0 technologies bypasses traditional ways of teaching with students operating outside the gaze of the teacher. In a sense this is not dissimilar to students gathering in a café or other informal setting to talk about their work; however, in the context of USQ, where such a high percentage of students (80%) study at a distance, the lack of ability to adequately monitor students, and the consequent difficulty in diagnosing and addressing problems as they arise, may pose significant issues. Nevertheless, if Web 2.0 tools are being used as part of assessment and are housed within the public domain there can be no effective monitoring of when, how, or by whom these sites are accessed and used. This may be addressed within the design of the course by limiting

- the dependence on this aspect for assessment, but that would then limit the uses of assessment for pedagogical purposes.
5. *Loss of control:* In a similar vein to lack of monitoring, when using Web 2.0 tools outside the university's domain there is no assurance for staff or students that those tools will endure, even for the life of a course/subject. This may result in the loss of important data and can potentially affect student outcomes. If Web 2.0-type tools can be employed within the university environment then there is at least a reasonable compromise. This will be demonstrated in the USQ case studies below.
 6. *Loss of history:* The main benefit for both staff and students in using an LMS such as Moodle to house Web 2.0-type tools is that there is always a record of practice that can be retrieved or called upon if needed. In most cases systems are backed up on a daily basis and do not run the risk of outsiders corrupting important data. This may not be important for some individual staff members, however at USQ it is a corporate requirement that course materials and interactions be housed in an unchanged and accessible form for at least a year, and that records of previously run courses are held for at least two years.
 7. *Assessment woes:* This relates very much to the loss of history and the ability of staff to assess the veracity of work presented by a student for assessment. This is not to suggest these problems do not also exist within “the wall,” but there is at least a track of the identities that have logged into the site. This also offers the student a level of security as her or she can, in most cases, track his or her assignment submissions. USQ's introduction of PLEs, allowing for the syndication of external sources, attempts to bridge this divide and provide a minimum level of monitoring based on a common student disclaimer of source materials.
 8. *Overwhelming choice:* There are so many choices now in the vast “wilderness” of the Internet that it is impractical for teaching staff at USQ to be conversant with, or have accounts with, all of the possible tools, sites, and environments that could be used for learning and teaching. At a simple level Wikipedia alone, for instance, lists 130 different social networking sites (“List of social networking websites,” 2009). Potentially, one teacher uses Facebook, another uses MySpace, while yet another wants to use the university's approach to PLEs. As previously mentioned, the additional cognitive load students (and staff) may be faced with when so much choice is offered can indeed be overwhelming. If the teacher is to be an effective mentor and guide, leading students through a process of learning, universities need to support this by empowering their staff to become more familiar with the diversity of new and emerging digital landscapes. However, the cost of such an approach certainly challenges the will of some department heads, even if their resistance runs the risk of their program and course offerings becoming increasingly irrelevant to students.
 9. *Loss of trust:* If Web 2.0 tools can be mediated by a student's PLE, or even housed within the LMS, the student can then trust the integrity of the content being supplied (as discussed above). There is also the sense that the teacher or university can monitor the secured space, thereby protecting students (and staff) from misuse, the threat of hackers, and the unreliability of transient spaces.
 10. *Inequalities:* With the large diversity of experience within the USQ non-traditional student base it can be considered inequitable to subject these students to a wide variety of Web 2.0 tools that may simply be used, or trialled, for their novelty value. Solid pedagogical advantage should be discernable prior to particular tools being taken up and

used. Again, this is not to suggest that these spaces should not be used, but rather that a Pedagogy 2.0 approach is preferred if they are to be used, which would include sufficient scaffolding to prevent the privileging of one set of prior skills, or understanding, over another. (Once again, see Chapter 3, as well as McLoughlin & Lee, 2010.)

EFFECTIVE USE OF WEB 2.0 TOOLS

Having highlighted the main considerations in using Web 2.0 technologies the chapter will now provide some examples of how these new technologies can be used effectively in learning and teaching programs, both within and outside of “the wall.” The affordances of Web 2.0 technologies have allowed the more traditional (face-to-face) universities to embrace the notion of flexibility in the way they provide opportunities for student learning, which was previously the domain of institutions that focused more on distance and e-learning. On the other hand, institutions that have had a high dependence on providing individualized distance and online learning experiences increasingly need to supplement their materials and methods, to address the changing needs of their increasingly diverse student cohorts. The potentially limitless choice of technologies and approaches for learners and teachers requires great adaptability to changing circumstances and learning needs. For today’s digital learner, who moves fluidly through the digital world, this is a limitless learning landscape (Dron & Bhattacharya, 2007). Again, some caution is warranted here, as certain hyperbolic assumptions underlie statements like these: “today’s digital learner” presumably belongs to Generation Y, but the “movements” of this generation in the “digital world” are highly varied and not necessarily fluid (Kennedy et al., 2008; see Chapter 16). In other words, what about those who move “less fluidly” or do not move in the digital world at all? In short, despite the excit-

ing opportunities that Web 2.0 technologies offer, it is vital to carefully consider the wide range of student abilities and needs at every step of the design and implementation process.

For USQ the need for more meaningful interaction between staff and students and among students has spawned an emerging dependence on a range of Web 2.0 communication tools embedded within the LMS and PLEs, such as:

- virtual classroom technology;
- synchronous and asynchronous voice and chat applications;
- three-dimensional (3-D) virtual worlds;
- e-portfolios and PLEs;
- blog and wiki spaces allowing for collaboration and reflection.

Brief examples of how these tools are currently being used at USQ are described below. It should be noted that USQ has employed a range of tools in conjunction with its installations of Moodle and Mahara e-portfolio software. The Moodle software has been employed at multiple levels: there is an installation for the student LMS; there is a separate environment for staff professional development and to serve as a playground for trialling new and emerging tools; a further installation for community activities engaging institutions and identities outside of the university’s walls; and finally, an OpenCourseWare installation housing courses offered through the International OpenCourseWare Consortium emanating from the Massachusetts Institute of Technology (see <http://www.ocwconsortium.org/> and <http://ocw.mit.edu/>).

Virtual Classroom Technology

The implementation of a campus-wide approach to virtual classrooms (VCs) at USQ in 2008, using the Wimba Collaboration Suite (http://www.wimba.com/products/wimba_collaboration_suite/), has allowed this technology to be embedded into the Moodle LMS. This has facilitated the estab-

lishment and contextual use of the VC at both a course/subject level and a university community level. The VC permits the synchronous sharing of voice, video, and presentations as well as application sharing, allowing these sessions to be either instructor or student led. Over the course of 2008, VCs were used in over 61 courses/subjects to host live interactive sessions, both in staff–student interactions and student–student interactions. Once a VC is established within a course, anybody enrolled in that course can access this room at any time. Archives can also be made of specific sessions to allow for recording of particular interactions for later, asynchronous use. This technology feels “natural” to Gen V students and yet is simple and intuitive enough for novices to cope with, and it has allowed many students, particularly distance students, to establish new networks previously unattainable.

As previously discussed, usability issues have been a concern, particularly for an institution with a high proportion of non-traditional learners such as USQ. For those students unable to interact in the online sessions due to bandwidth constraints, each VC can be accessed by telephone link at the cost of a local call. Initially it was not clear how many students would require this functionality; however, within the first 10 months this feature had been used well in excess of 500 times.

Synchronous and Asynchronous Voice and Chat Applications

The use of voice and chat applications has steadily been developing for many years at USQ. In previous years tools such as MSN Messenger (now “Windows Live Messenger”) and Skype were used in an ad hoc way. However, the implementation of Moodle has allowed the course/subject and community-based embedding of voice and text-based chat applications. The tools being used are the Wimba Voice Board tool, allowing asynchronous voice and text messaging, and the Wimba Pronto tool, allowing synchronous chat with

similar functionality to MSN Messenger. These two tools were not implemented until Semester 2, 2008, and adoption into courses is increasing, with over 1,700 sessions being recorded prior to the end of 2008. The Moodle LMS also allows for asynchronous chat within the individual student profile.

3-D Virtual Worlds

The proliferation of 3-D games environments, particularly over the last three to four years, has opened up new possibilities for creating immersive multi-user learning environments, even if this is problematic for the university from a security perspective. However, the security issue has mostly been resolved by employing and integrating two 3-D environments simultaneously, Second Life (SL) and the open source product Open Simulator (OpenSim). There were occasions where it was considered important for students to be in a wider and more open environment than SL provides, while on other occasions it was necessary to ensure more privacy than SL could offer, or a more secure space for students to interact. This more secure space was achieved by deploying the OpenSim environment “within the walls” but using the interoperability features of that product to take students out to SL when required, and vice versa.

For example, USQ currently has an island in the SL environment called *Terra Incognita*, hosting a range of different activities, including marketing and promotional activities for the university, a careers fair, teaching areas, breakout rooms, a mock law court for hosting moot courts, and a number of social spaces. The only concern with this has been that anyone who can access the USQ island can drop in at any time and observe what may be considered as private. On the other hand, OpenSim embedded in the USQ environment allows for the creation of more discreet spaces. For the most part this has alleviated many of the security concerns, while also providing a controllable level of interoperability with SL. In practice this means

that a 3-D course can be set up within “the wall,” which then allows teaching staff to send students out and potentially bring information back in.

E-Portfolios and PLEs

The move towards e-portfolios for both students and staff has taken an interesting turn at USQ in recent times. The adoption of the open source Mahara (<http://mahara.org/>) software has opened up a range of new vistas for teaching staff. Mahara and the integration of this software with the Moodle LMS has allowed the university to provide not just a space for students to create a profile for themselves with some additional features, but also an environment for them which is akin to a PLE. The Mahara environment allows for the creation of multiple views that students can set up for a range of purposes. They can create and upload documents, house a blog, and draw in content from external spaces, making a variety of these available for different people to view, and in some cases interact with (see Figure 1).

For example, education students are using their Mahara-based PLEs to house records of their professional practice while also using them

to complete assignments for another course. Final-year accounting students are building up their PLEs with portfolios of their work-integrated learning practice. Visual arts and multimedia students are using their PLEs as a stage from which to link to a range of other environments housing video and audio components while uploading others. These elements then all appear within one or multiple views. Staff undertaking professional development activities are using the PLEs to house and manage artifacts that they can then use towards promotion, while also linking to the University’s ePrints (research publications) repository that feeds all their publications into this same environment. Yet all of this is only just scratching the surface of what can be potentially done with PLEs, thanks to the rich affordances of Web 2.0 technologies.

Blog and Wiki Spaces Allowing for Collaboration and Reflection

The final example relates to a series of four work-integrated journalism professional development courses housed in the Faculty of Arts at USQ. The courses use a combination of interactive

Figure 1. The USQ PLE using Mahara

tools integrated into the Moodle LMS. A program website manages how students should negotiate the learning environments and interactive tools, providing information pertinent to the whole program. This site then provides links to the four online multimodal course materials sites, using USQ’s Integrated Content Environment (ICE) with integrated multimedia enhancements, and links to each course’s blog, wiki, and discussion forum spaces. The use of blogs in assessment enables students to complete story-writing assignments as part of their daily work at the newspaper and, as with the feature assignments for the standard university course, submit the stories as coursework, engaging in critical evaluation of the practices they applied in story composition. Elements such as a newsroom diary, a research record and reflective posts on self-selected stories, a court experience journal, and a story mission statement are built into an e-portfolio-based assessment model.

CONCLUSION

As the examples above suggest, the introduction of Web 2.0 technologies into the online learning and teaching environment at USQ is characterized by a staggered whole-of-institution approach, and deliberately so. This staggered approach is based on the recognition that while the introduction of Web 2.0 technologies in a higher education context has many potential benefits, such benefits are at the same time largely unproven and still highly contested. There are, for example, issues of privacy and ownership of data to consider, as well as ethical issues related to inadequate evaluation of implementation (Chowcat et al., 2008). The staggered approach is thus designed to allow time to work through some of the issues, without putting innovation on hold in the meantime. While the uptake is initially driven by early adopters, the ultimate objective is for staff and students to engage with a Web 2.0 environment and its ever-expanding array of tools, and all the advantages that this would afford. The advantages are

roughly twofold: firstly, in a professional context most students will need to be at least comfortable in a Web 2.0 environment upon graduation, and have the ability to quickly adapt to changing circumstances and opportunities in this environment; secondly, moving academic teaching staff towards adopting Pedagogy 2.0 is expected to instill a lifelong learning ethos, and thus the ability to consistently take advantage of the potential of new technologies, while stimulating continuous reflection on pedagogical practices. Both the staggered and whole-of-institution aspects of the approach are designed to provide adequate support and professional development opportunities on the one hand, and on the other hand to provide a safeguard against ad hoc and inconsistent practices across different faculties and even within different faculties. In this way, the approach is designed to not frighten the horses away, but instead to make the water attractive enough to drink.

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KEY TERMS AND DEFINITIONS

Generation Y: Also called “digital natives,” “Net Generation,” “Generation Next,” and “Millennials.” Refers to a group of individuals, born roughly between 1980 and 1994, who have been characterized by their familiarity with and reliance on ICTs. See also Generation V.

Generation V: “Generation V” (for “virtual”) is a concept that removes the specific age bracket from the definition of “Generation Y,” to include anyone immersed in virtual environments (Havenstein, 2007). See also Generation Y.

Learning Management System (LMS): Basically software for designing and managing a

learning environment. LMSs used by universities facilitate the management of courses and information sharing, and can include Web 2.0 applications such as blogs and wikis.

Moodle: A “software package for producing internet-based courses and web sites ... [and] an ongoing development project designed to support a social constructionist framework of education” (Pukunui Technology, 2005, “Moodle,” para. 1). Moodle is provided freely as open source software (under the GNU Public Licence), which means it is copyrighted, but clients have additional freedoms to tailor the software to their specific needs.

Personal Learning Environment (PLE): A “facility for an individual to access, aggregate, configure and manipulate digital artefacts of their ongoing learning experiences” (Lubensky, 2006, “Towards a definition,” para. 1). PLEs are directly related to the affordances of Web 2.0, and an example of a PLE is an e-portfolio as outlined in this chapter.

Social Networking Environment (SNE): Broadly refers to various Web 2.0 applications, each of which depends on social networks. Examples include blogs, wikis, and social networking sites like Facebook.

Virtual Classroom (VC): A “learning environment that exists solely in the form of digital content that is stored, accessed, and exchanged through networked computer and information systems” (“E-learning—the virtual classroom,” 2005, para. 1). Examples include Wimba and Elluminate, each of which allows for multiple forms of synchronous interaction, in the form of chat, voice, and video.

Web 2.0: Refers to a perceived second generation of web development and design, that aims to facilitate communication, secure information sharing, interoperability, and collaboration on the World Wide Web (“Web 2.0,” 2009). Some of the Web 2.0 applications include social networking sites, blogs, and wikis.

Chapter 15

Facebook or Faceblock: Cautionary Tales Exploring the Rise of Social Networking within Tertiary Education

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ABSTRACT

This chapter presents an introduction to an overview of the rise of social networking platforms, systems, and tools within tertiary education, through an analysis and exploration of one such platform, namely the popular social networking website Facebook. Social networking sites, like other Web 2.0 services, emphasize online socialization, collaboration, user-driven content generation, and sharing among users. They enable different forms of pedagogy equally as they disable and challenge more traditional teaching and learning approaches within tertiary education. In this chapter, various criticisms, challenges, and concerns in relation to the incorporation of the new tools within the student learning experience are explored. The chapter seeks to illuminate some of the educational possibilities of incorporating Web 2.0 social network structures provided by websites such as Facebook into academic courses, and to offer suggestions for effectively leveraging these emergent social networks to enhance the student learning experience.

INTRODUCTION

Educators have widely acknowledged the value of community building and social interaction with and among students, in both face-to-face and online classes (Palloff & Pratt, 2007; Chickering & Gamson, 1987). With the emergence of Web 2.0-based social networking sites such as Facebook

(<http://www.facebook.com/>), learners have developed a social world that is parallel to and often interlinked with their everyday work and study activities. The deep penetration of web technologies into the lives of students has been highlighted by a number of researchers (e.g., Conole, de Laat, Dillon, & Darby, 2006; Green & Hannon, 2007; Kamel Boulos & Wheeler, 2007) and their immersion in digital technology is argued to have influenced the interests, attitudes, and aptitudes of

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students in ways significant for education. Multiple studies and authors (see Frand, 2000; Oblinger & Oblinger, 2005a; Tapscott, 1999) suggest that the digital generation learns differently compared with preceding generations of students. Many researchers see Web 2.0 as having the potential to transform e-learning and traditional teaching methods (Lytras & Naeve, 2006; Owen, Grant, Sayers, & Facer, 2006; Kohut, Parker, Keeter, Doherty, & Dimock, 2007), and current research shows a growing interest in ways of harnessing the new opportunities offered to improve the student learning experience (Kamel Boulos & Wheeler, 2007; Anderson, 2007). Suggested is that Web 2.0 tools, including social networking sites, offer possibilities to assist in a move from paradigms of teacher-centered, “sage on the stage” delivery of instruction in which learners are passive recipients, towards the facilitation of active, participatory, co-collaborative interactions that transcend traditional classroom boundaries.

Student use of Web 2.0-based social networks (e.g., Facebook and MySpace) has provoked a variety of responses from teachers and educational institutions (refer to Huijser, 2008 and also to later sections within this chapter dealing with specific strategies as well as challenges). Some schools in the USA have explicitly banned these sites and blocked them from being accessed on campus (Cameron & Fox, 2007), while many educators’ blogs anecdotally expound the pedagogic benefits of these tools and advocate their use to enhance teaching, learning, and assessment. Regardless of the policies and views of teachers and institutions, students are virally immersing themselves into online social networks. Successful realization of the potential and possibilities of Web 2.0-based social networking requires a thorough understanding of the potential barriers influencing acceptance of these technologies by educators and learners alike. The capabilities of the current wave of online spaces for social networking and their application in tertiary education raise a range of questions connected to copyright,

content ownership, privacy and identity online, content reuse, and the role/place of the educator in these social networks.

The objectives of this chapter are to provide an overview of social networking sites, and, through an exploration of one illustrative example, Facebook, explore some of the educational possibilities, challenges, and cautionary tales relating to the rise of social networks within tertiary education. Some specific strategies and considerations are provided for the reader to ponder in relation to the pedagogic adoption of Facebook appropriate to a tertiary education context.

ONLINE SOCIAL NETWORKING

Lenhart and Madden (2007), in their report for the Pew Internet and American Life Project, state that social networking use has quadrupled in the last three years among adults in the U.S., and that roughly 35% of adults now have profiles on social networking sites. However, it is arguable that the Internet has been used for social networking since its early days, even before the genesis of the World Wide Web. Early adopters engaged in online interactions through newsgroups, listservs, and discussion forums, and participated in communities comprised of individuals who possessed the ability to access and technical competence to make use of these forms of online communication.

In the late 1990s and early 2000s, online social networking became more proliferate with the emergence of sites like Friendster and MySpace. These sites allow people to create personal profiles and build networks of connections with others. More recently, Facebook, incorporating ease of use and ability to connect with others of shared interests, moved social networking from the domain of early adopters into the mainstream. Stutzman (2007) offers the following depiction of the capabilities of and user experience offered by sites such as MySpace and Facebook:

There is something essentially placeful about online social networks; as I log in, I am engaged by a cross-section of my social relationships. In an instant, information is revealed, opportunities are discovered, and a website becomes a social nexus—from which I can derive a sense of gratification, meaning and identity. (p. 1)

Since their introduction, social networking sites such as MySpace, Facebook, Cyworld, and Bebo have attracted millions of users, many of whom have integrated these sites into their daily routines and practices. Presently, there are hundreds of social networking sites, incorporating various technological affordances and capable of supporting a wide range of interests and practices.

While their key technological features are fairly consistent, the cultures that emerge around the sites are varied. Table 1 contains an attempt to capture and encapsulate the multifaceted perspectives of what social networking sites involve.

Web 2.0-based social networking sites such as Facebook are challenging existing learning theories and paradigms that were developed at a time when immersive online communication between people was not as prevalent as it is today. Mason and Rennie (2008) support this view, citing Siemens' (2005) claim that Web 2.0 technologies have changed the learning landscape. These changes are captured, at least in part, by Siemens' notion of connectivism, which he describes as "a learning theory for the digital age" (p. 3), arguing

Table 1. Perspectives on social networking site features/functions

Feature/function	Explanations/perspectives of what is enabled
Establish a personal profile	<ul style="list-style-type: none"> • Construction of a public or semi-public profile within a bounded system (Boyd & Ellison, 2007) • Construction of an online identity through an online space where one can "type oneself into being" (Sundén, 2003, p. 3) • Maintenance of a certain level of visibility of the profile within the site, which may differ depending on the site and according to user discretion (Note: Structural variations around visibility and access are one of the primary ways in which social networking sites differentiate themselves from one another.)
Identify "friends"	<ul style="list-style-type: none"> • Articulation of a list of other users with whom one shares a connection or affiliation (which may or may not extend to the offline world), i.e. "friends"—this term can be misleading, because the connection does not necessarily equate to friendship in the everyday sense (Boyd, 2004) • Incorporation of friendships in social networks that often began offline and later migrated online (Lampe, Ellison, & Steinfield, 2006)
Establish/indicate connections	<ul style="list-style-type: none"> • Showing of "public displays of connection" (Donath & Boyd, 2004, p. 71); these can serve as important identity signals to help navigate the networked social world, and may assist in the validation of information presented in profiles • Viewing and traversing one's connections and those made by others within the community or system (Boyd & Ellison, 2007) • Finding others (strangers) with shared interests, political views, and/or activities • Supporting the maintenance of pre-existing social networks
Share content and collaborate	<ul style="list-style-type: none"> • Incorporation of user-generated content, including the co-creation, co-editing, co-construction, and sharing of ideas and knowledge artifacts, often reflecting the collective intelligence of users • Integration (to varying degrees, depending on the site) of new information and communication tools and applications, e.g., mobile connectivity, blogging, photo/video sharing • Fostering of a "gift culture" in which users contribute as much as they take on the Web (Mason & Rennie, 2008, p. 4)
Join/establish communities and groups	<ul style="list-style-type: none"> • Establishment of communities of practice (Lave & Wenger, 1991; Wenger, 1998) • Application of Lave and Wenger's (1991) concept of legitimate peripheral participation as users progress from being newcomers to fully participating in the community • Facilitation of regular communication and interaction between "latent ties" (Haythornthwaite, 2005, p. 136) who share some offline or online connection • Creation of formal connections to people one is acquainted or familiar with, and/or with whom one communicates and shares views/preferences/interests (Mason & Rennie, 2008)

that we derive our knowledge and competence through establishing connections. This stands in contrast to the view adopted by constructivism, which sees learners as attempting to foster individual understanding by meaning-making tasks and experience. In connectivism, this “meaning making” is reframed as the perception/recognition of patterns and the formation of links both within and between specialized communities and information/knowledge architectures. Connectivism is proposed as a new theoretical framework that recognizes the limitations of behaviorism, cognitivism, and constructivism, and extends our understanding of knowledge and learning to reflect and explain the dimensions of social interactions enabled by new connective technologies, including but not limited to those of the Web 2.0 movement.

INTRODUCING FACEBOOK

Facebook was founded in 2004 by Mark Zuckerberg with his fellow computer science classmates at Harvard. It is a social networking site that allows members to participate in an online social community, creating profiles, forming connections with others, and engaging in discussion and information/media exchange. Although Facebook is by no means the only social networking site in existence (see Sharma, 2007 for a list of 350 other such sites), it was originally intended for and has become increasingly popular with students, drawing massive numbers of them in to an online world where they spend countless hours browsing profiles, meeting new people, building relationships, exchanging information and media, and exploring shared interests. The EDUCAUSE Learning Initiative (2006) suggests that any technology that is able to captivate so many students for so much time not only carries implications for how those students view the world, but also offers rich opportunities for education. In particular, there is scope for educators to identify and analyze the elements of social networking that

students find so compelling, and to incorporate those elements into teaching and learning. Some of these elements are discussed and explored in later sections of this chapter.

According to Wikipedia, Facebook is the leading social networking site based on monthly unique visitors, having overtaken its main competitor, MySpace, in April 2008 (Facebook, 2009). As of September 2009 there are a reported 250 million active users (Facebook, 2009), with the site widely described as a “viral” phenomenon. One possible explanation as to why students find Facebook so compelling may lie in its “one-stop-shop” nature. For example, it incorporates the ability to create online a “complete” snapshot of the various facets of one’s life, inclusive of plans for the weekend, photos from recent outings, messages and updates from friends present and past, access to numerous applications for a variety of purposes, the ability to be part of online communities and maintain membership across a wide range of interests, and news updates ranging from assessment requirements to reviews of the best place to buy coffee.

Social networking sites in general, and Facebook in particular, are being actively investigated across a number of research areas. For example, research has been conducted on identity presentation and privacy concerns in Facebook (Gross & Acquisti, 2005; Stutzman, 2006). In light of the amount of information Facebook members provide about themselves, the relatively public nature of the information, and the lack of privacy controls enacted by members, Gross and Acquisti (2005) argue that users may be putting themselves at risk both offline (e.g., stalking) and online (e.g., identity theft). Other recent Facebook-related studies examine student perceptions of teacher presence and self-disclosure (Hewitt & Forte, 2006; Mazer, Murphy, & Simonds, 2007), temporal patterns of use (Golder, Wilkinson, & Huberman, 2007), and the relationship between profile and friendship articulation (Lampe, Ellison, & Steinfield, 2007). Some exploration of social networking and the benefits of social capital has also been carried

out (Ellison, 2007). The term “social capital” here refers to the idea that social networks have value and can affect the productivity of individuals and groups.

EDUCATIONAL BENEFITS OF FACEBOOK

This section broadly situates the potential educational benefits of using online social networking sites such as Facebook, in preparation for the next section, where specific teaching and learning strategies are proposed. The main benefits of Facebook for teaching and learning arise from its ability to enable students to share information, knowledge, and artifacts within a community and co-creative, dynamic network linked through members’ personal profiles and the associations between them. The information in these profiles serves as links from which other network members with similar interests, communities, or latent ties can associate. Users can navigate through profiles based on criteria and communicate with others via asynchronous and instant messaging, comments, blogs, and so on. They can add “friends” and gain access to various sorts of semi-public information such as pictures, personal details, and blog entries. Although some concerns about the educational use of social networking sites have been expressed (Anderson, 2007), its benefits are clear, given that learning is a social activity; social networking sites, with their powerful social affordances, have the capability to connect and engage students and to involve both students and teachers within new community and connected pedagogies.

As previously discussed, many students are already using Facebook for their own purposes outside the classroom, and it is already very much integrated into their day-to-day practices. Within the site, they engage in educationally useful and relevant social behaviors such as converting historical associations and weak ties to contextually relevant links, and building on these to grow and

strengthen communities. They draw upon shared information and connections to learn about acquaintances based on groupings related to common interests, managing a large network of existing relationships and often resurrecting past relationships—all of which Ellison (2007) suggests relate to the formation and maintenance of social capital. “Social capital” in this context of Facebook use and as adapted from Donath and Boyd (2004) is used to describe the use of technologies in ways that expand one’s social network and result in an increase in available information, opportunities, and benefits from this large, heterogeneous network. Educators can tap into this existing behavior to promote higher levels of engagement as well as immersion in authentic learning experiences that take place beyond traditional boundaries.

The use of Facebook’s “comments” feature (similar to a multi-user or community blog) aligns with a number of potential educational benefits of Web 2.0 and social software tools as outlined by Richardson (2006) in his book, *Blogs, wikis, podcasts, and other powerful web tools for classrooms*. Richardson suggests that the act of responding to others’ postings (“postings” here being a broad term encompassing many forms of visual and textual online discourse) can trigger and promote critical as well as creative, intuitive, and associational thinking. Ellison (2007) also identifies other educational benefits of blogs that may apply to the use of the Facebook “comments” feature. According to her, the posting of online comments by students encourages them to engage with positions divergent from their own; the ability to write for and present to a worldwide audience on the Internet as opposed to an audience of one also engenders greater investment from students in the topic, activities, and tasks at hand.

Broadly speaking, the educational benefits possible within the structure of Facebook allow students to demonstrate critical thinking, take creative risks, and make sophisticated use of language and digital literacy skills. In doing so, the students acquire creative, critical, communicative,

and collaborative skills that are useful in both educational and professional contexts. Facebook can facilitate the development of communities of practice (Wenger, 1998) and communities of interest (Fischer, 2001). These communities allow individuals from *spatially*, *temporally*, and *conceptually* distant or disparate areas to work together on a specific educational activity. Spatial distance here refers to the use of Facebook (or more specifically, the “groups” function within Facebook, for example) to support geographically distributed people working together, enabling the sharing of experiences and informed participation (Arias, Eden, Fischer, Gorman, & Scharff, 2000). Temporal distance refers to the creation, over time, of learning artifacts. Finally, conceptual distance relates to the establishment of a shared understanding or common ground (Resnick, 2006) in the fostering of co-creative and collaborative interactions. The growing popularity of Facebook points to the possibility that some of the educational experiences traditionally relegated to a classroom experience may be accomplished under circumstances dramatically different from those typically seen in tertiary education.

In summary, there appear to be three key advantages of social networking technologies for tertiary education. Firstly, they offer a set of affordances relating to the creation of online collaborative activities. Secondly, many students are already using these technologies for socialization and communication, and so may be willing to use them in their learning. Thirdly and lastly, many of the systems and tools are free to use and come without the restrictions found in existing institutional learning management systems (LMSs). Other advantages include the ability to aggregate information, data, and ideas from different places quickly and easily, and the ability for students to maintain access to the material after they have completed their studies, which has implications for lifelong learning. As social networking technology deepens its impact and is increasingly used by the new generation of learners, educators

and tertiary education will be under increasing pressure to consider its appropriate use. The next section suggests some specific strategies for using Facebook in tertiary teaching and learning.

STRATEGIES FOR USING FACEBOOK IN TERTIARY TEACHING AND LEARNING

Many claim that today’s students approach and use technology as “digital natives” (Prensky, 2001, 2004; see also Chapter 15 for a critical examination of this concept), navigating through online communities in ways that allow them to do what they want, communicate with whom they want, and in ways, times, and places/spaces of their choosing. Easily accessible and user friendly, social networking tools such as Facebook allow students to explore, share, engage, and *connect with people and content* in meaningful ways, a notion that resonates with Siemens’ (2005) aforementioned theory of connectivism. From a pedagogical perspective the changing “connection” between the teacher and student mediated through such sites as Facebook can be described as a move from “sage on the stage” to “meddler in the middle” (McWilliam, 2008). McWilliam tells of a shift in the learning landscape in which the teacher and student are positioned as partners or associates in the learning process. She suggests that in the new landscape, the teacher must be a pedagogical expert but may not necessarily be an expert in the knowledge domain and/or the technology, as given the pace at which knowledge is generated and becomes superseded in the digital age, teachers will need to learn continuously with and from their students.

In the next two subsections, some specific, practical strategies are offered that tertiary educators can use to incorporate Facebook into their teaching practice. Then, in the following section, challenges and cautions regarding its use are outlined. It is important to note that the strategies

suggested below are intended to be combined into holistic, overall approaches appropriate to the educational context, rather than being taken individually and implemented in isolation.

Building Online Communities through Facebook

Facebook can be used to set up discussion groups and collaboration environments to accommodate and support student project teams, units or courses of study, and even university-wide initiatives. The development of virtual communities in tertiary education has been the subject of analysis and investigation by many authors in recent years (e.g., Luppici, 2007; Hotrum, 2008), many of whom suggest that continuous learning and pedagogical multiplicity can be encouraged and supported through the effective use of social networking tools and platforms. These tools and platforms also have the potential to promote continuity of the learning process and the community beyond the conclusion of a formal academic program or unit of study.

The following recommendations/strategies relating to the establishment of a community space within Facebook have been adapted from Hotrum (2008):

- Create an informal network space for students and teachers with personal profiles, blogs, and resource repositories. This is especially relevant to courses and cohorts highly reliant on peer support, such as those in which students are enrolled in part-time studies.
- Ask students to locate and join at least one Facebook group pertaining to their discipline or area of study. (See for example the “Educators using Facebook” group at <http://www.facebook.com/group.php?gid=7036945291>.)
- Design collaborative learning and group work activities within the social network-

ing site as a supplement to activities carried out in other virtual learning environments. Web 2.0-based online spaces like Facebook often provide access to far more extensive toolsets than is available within the “walled garden” of an institutional LMS. The toolsets are also constantly growing, and offer both students and teachers a higher degree of flexibility and customizability.

- Take steps to foster a community culture of continuous learning and knowledge sharing in which students contribute to the ongoing expansion, refinement, and the use of the knowledge base of collaboratively generated content.

Using Facebook Applications in Tertiary Education

As was alluded to in the previous subsection, Facebook contains a large and growing collection of tools. The following list of Facebook applications has been adapted from the article, *The Facebook classroom: 25 Facebook apps that are perfect for online education* (2008), and also draws on the personal experience of the author. This is by no means a definitive list, but it does offer some suggestions regarding applications that may be suitable for adoption in tertiary teaching and learning:

- *JSTOR Search*: Using this application, students can find and access the full text of scholarly research articles.
- *Notely*: An application that assists in organizational activities by providing calendar, notes, and assignment functions.
- *Study Groups*: This tool allows the creation of online spaces for study groups and project teams.
- *Add Courses*: At the time of writing of this chapter, this is the only application with instructor and course management functionality (see <http://apps.facebook.com>).

com/courses/). Courses can be used without “friending” students, and teachers can manage specific classes. It also permits the creation of an instructor page, and provides the ability for students to post assignments to the online class space.

- *Make a Quiz*: This is an application that can be used by teachers and students to facilitate the creation of simple online quizzes.
- *Courses 2.0*: Facilitates the sharing of class schedules, work activities, and the formation of study groups. It also enables communication with peers regarding common course challenges and allows multiple settings to control privacy and notifications.
- *Flashcards*: Allows the creation of flashcards to be used in drills/exercises that aid retention and memorization.
- *My Documents*: Allows students and teachers to upload documents for sharing with other users.

Good Practices and Tips/Guidelines

Regardless of whether Facebook is being used for the establishment of an educational community space, in support of a particular pedagogical intent, or for the functionality provided by a particular constituent tool (e.g., the “Courses 2.0” application mentioned above), there are some overarching considerations regarding its adoption and implementation within a tertiary education context. Some of these are discussed below; they have been adapted from the work of Staton (2008) as well as, once again, being informed by the author’s personal experience.

One common concern relating to Facebook use by educators is the need to keep the social and personal aspects separate from the professional (academic) aspects. One way of accomplishing this is to create a “teacher” profile separate from one’s “personal” profile; this requires the use of two different email accounts. Related to this are issues arising from the choices students need

to make in regards to what information is to be shared with their teachers and the ways in which it is to be shared. If not properly planned and considered, this may lead to a number of problems. It is recommended that students be asked to create a limited profile with controlled settings, “friend” the teacher, and add him or her to the limited profile list. In this way, students need not show teachers their photos, videos, status updates, friends, posts, or notes. “Mini-feed” and “Photo Albums” should also be turned off.

Group work, collaboration, and co-creation within an online space such as Facebook can be facilitated through the establishment of Facebook groups. The group can be set up around a particular topic, assignment, subject, or even a faculty or department. Groups in Facebook allow the administrator as well as group members to manage basic information, memberships, officers, photos, videos, and links, in addition to providing a wall for posting public notices, a facility for uploading documents, as well as the ability to share opinions through the comments feature and schedule events through the calendar.

Rich media sharing within a Facebook group or community space is a powerful way of drawing students into the online environment and associated educational activities. In particular, the sharing of photos and “tagging” students within the community can enhance the sense of belonging to the community. The group or community space can also be used to share examples of student work with instructor feedback or to subject the work to constructive criticism from peers through the comments feature. The use of notes allows students to collaboratively provide more personal feedback to the authors of uploaded work products.

Many students entering tertiary education are likely to be users of Facebook (Golder et al., 2007). Although most of this activity is hidden to educators, it is significant because it is interlaced with studying and more formal teaching and learning structures. The use of Facebook within

tertiary education does represent a new, and so far, tentatively explored landscape for learning; however, as with all new and unexplored realms there are some challenges and areas to be avoided or entered with caution.

CHALLENGES, CRITICISMS, AND CAUTIONARY TALES

The previous sections have adopted a largely positive and optimistic view of Facebook in education, discussing its potential benefits and suggesting strategies for its use for tertiary teaching and learning. However, the possible risks and negative aspects of the use of this emergent technology remain to be considered. This section is therefore devoted to discussing some of the challenges and criticisms regarding educational uses of social networking sites and Facebook, from various perspectives. It includes some “cautionary tales” with which to contemplate the appropriateness of Facebook within the reader’s context.

Oftentimes, technology is incorporated into pedagogy due to the popularity of the tool or application and its buzz-word status in mainstream, non-educational settings. Adoption is largely based on the rationale or premise that if students are already using the tool outside the classroom, it is possible—and beneficial—to leverage this interest and associated technological skill for teaching and learning. However, it is questionable whether this reasoning can be broadly applied to *all* technologies and learning scenarios. Facebook is a social space, used for informal conversations, building and maintenance of relationships, and the voyeuristic tendency of “profile surfing.” While students may use Facebook to create informal networks, study groups, or communication tools for clarifying assignment requirements, for instance, at present its use for formal teaching and learning is relatively unexplored territory and is thus somewhat uncertain.

The use of online social networking sites and their appropriateness to tertiary education *must* be considered from a cautionary point of view. Currently, there are reports that cast a shadow of doubt on the accepted wisdom of whom and how many people use social networking sites, although research indicates that they are growing in popularity worldwide (comScore, 2007). This growth does not necessarily equate with an imperative for educational use. Even outside of the tertiary education arena, questions are being raised regarding the value and usefulness of social networking sites vis-à-vis the dangers and drawbacks. For example, U.S. military soldiers were banned from accessing MySpace (Frosch, 2007); the Canadian government prohibited employees using Facebook (Benzie, 2007); the U.S. Congress proposed legislation to ban youth from accessing social networking sites in schools and libraries through the Deleting Online Predators Act (H. R. 5319, 2006) and the Protecting Children in the 21st Century Act (S. 49, 2007). Ellison (2007), in an EDUCAUSE Center for Applied Research (ECAR) report, lists several concerns related to Facebook, including those relating to accountability to the university in terms of intellectual property, privacy, archiving, and exposure to advertising. Additionally, it is important that educators are aware that they may face resistance from students in their attempts to co-opt Facebook for academic purposes.

Many authors are also beginning to question claims and assumptions regarding “digital native” (Prensky, 2001) and “Net Generation” students, and their use of technology within tertiary education (see Chapter 15). Oblinger and Oblinger (2005b) suggest that students are generally technology savvy but may not be as adept at using the technology effectively for academic or study purposes. Professor Rosemary Luckin of the London Knowledge Lab at the Institute of Education, University of London (quoted in O’Brien, 2008, para. 8) claims that “The worrying view coming

through is that students are lacking in reflective awareness ... Technology makes it easy for them to collate information, but not to analyse and understand it. Much of the evidence suggests that what is going on out there is quite superficial.”

In the U.S., an ABC news story (Davis, 2009) told of how a Facebook group entitled “For the love of god—don’t let parents join Facebook” recruited 5,819 high school and college-aged members, intent on stopping the growing number of parents joining Facebook from “spying” on them. It quoted a comment by a university sophomore, who remarked: “It’s really weird that nonstudents and parents use Facebook ... It makes me feel really uncomfortable that my older aunt has Facebook, because she says that she likes to check up on her teenage nieces and nephews and takes our pictures for her own use. That’s creepy.” (para. 3). An article in the UK publication *The Guardian* (Hoare, 2007) bore the headline, “Students tell universities: Get out of MySpace!” Similar sentiments were echoed in an article that appeared in *The Chronicle of Higher Education*, entitled “When professors create social networks for classes, some students see a ‘creepy treehouse’” (Young, 2008).

Chu and Meulemans (2008) provide empirically supported insight into how students are using Facebook and MySpace in academic libraries. Data gathered through a survey and focus group revealed that 67% of surveyed students discussed their schools and professors on these two sites. Students reported a reluctance to communicate with professors via these means and indicated that email was a more appropriate method of communicating with faculty.

Many of the above cautions regarding the use of Facebook are summarized within a comment made by Danah Boyd (2008):

In their current incarnation, social network sites (SNSs) like Facebook and MySpace should not be integrated directly into the classroom... I have yet to hear a compelling argument for why social

network sites (or networking ones) should be used in the classroom. Those tools are primarily about socializing, with media and information sharing there to prop up the socialization process (much status is gained from knowing about the cool new thing). I haven’t even heard of a good reason why social network site features should be used in the classroom. (“Danah’s response to said proposition,” paras. 1 & 5)

In spite of the above, however, the final report of the Joint Information Systems Committee (JISC) Learner Experience project (White, 2007) asserts that universities cannot afford to ignore social networking. Despite students wanting to keep their online personae separate, the JISC report maintains that universities and teachers can and should make sensible and considered use of Web 2.0. JISC project manager Lawrie Phipps believes Facebook and MySpace could soon replace the student union bar as a venue for meeting and chatting. According to him, “We’re seeing a set of new online literacies emerging but we need to understand how students use those literacies ... The challenge for tertiary education is to learn how to integrate the social networking sites with traditional academic practice and traditional ICT systems” (Hoare, 2007, para. 15). Some universities are taking this consideration on board. McKigney (2007) reports on the establishment of Ithaca College’s Facebook Task Force, a committee of faculty members, administrators, and students established to study the Facebook phenomenon and its impact on life at the College. Also, Shepherd (2008) stresses that universities need to review plagiarism policies to catch Facebook cheats. Interestingly it appears as if some institutions are establishing regulatory policies for Web 2.0 and social networking prior to devising institutional strategies for their instructional use. Clearly, deeper and more systemic analysis of the appropriateness of social networking sites like Facebook is needed as it relates specifically to teaching and learning.

In general, the advantages of using of information and communication technology (ICT) for enhancing student learning are well known and accepted, yet widespread adoption by university faculty whereby ICT is embedded transparently and appropriately with a clear pedagogical intent still eludes us (see for example Zemsky & Massy, 2004). Although there have been some successes, overall, tertiary education has yet to convincingly demonstrate that ICT has had a systemic, widespread, or sustained impact on the process of teaching or on student learning outcomes, and still the “potential” of ICT to transform teaching and learning remains. In continuing to explore the use of social networking sites for Web 2.0-based e-learning, it is imperative to establish sound and research-informed pedagogical frameworks with which to underpin instructional/learning design and practice. Suggested broadly is that these frameworks should evolve from the same critical aspects deemed instrumental to the success of e-learning as outlined by Alexander (2001). These frameworks must be based on similar pillars of:

- *University context:* Is the institution ready for social networking technologies? Universities and colleges need to respond by resolving traditional organizational issues surrounding technology, staff and student support, intellectual property and privacy, and appropriateness to context.
- *Teachers’ perception and skills:* What teaching philosophy and technical skills frame the effective use of social networking technological systems? This is especially important when considering the use of sites such as Facebook, where the boundary between teachers’ personal and professional/academic lives can be affected through the misunderstanding or accidental modification of a profile setting.
- *Instructional planning:* There is a need for careful pedagogical planning oriented towards learning outcomes, not “bolt-on”

(Graves, 2005, p. 96) technology development. Also, the careful design and articulation of appropriate assessment strategies, including a consideration of issues such as plagiarism, are required.

- *Teaching strategies:* Learners must be provided with a clear understanding of the learning process and what is expected of them prior to the commencement of activities. The effective use of technology within pedagogical tasks must also be appropriately and adequately scaffolded.

In summary, the following are seven key points for educators seeking to capitalize on the potential of Facebook for tertiary teaching and learning:

1. Establish a clear rationale for the use of a social networking site like Facebook, supported by a solid pedagogical framework that is aligned with the intended learning outcomes and suitable for the learning context.
2. Acknowledge that part of the benefit of the use of a site like Facebook can come from its novelty and social popularity, and that this can act as a motivating factor for students. However, do not allow this to be the sole driving force.
3. Have a clear understanding of the potential benefits, pitfalls, and challenges specific to the educational context in which social networking is to be integrated.
4. Explore the online space and functions offered by Facebook (i.e., register an account, examine the features, set up a profile, test out / experiment with applications, join relevant groups, etc.) *before* using it with a cohort of students.
5. Create a professional profile in Facebook that is separate from your personal profile, to ensure a clear delineation between the two realms.

6. Clarify your expectations with your students on *why* you are using Facebook within the educational context of your course. In particular, establish clear guidelines and boundaries regarding participation in activities.
7. Support and scaffold learning tasks incorporating Facebook from an assumption that students may *not* be competent or skilled in the use of this medium for educational/academic purposes.

CONCLUSION

What is beyond debate is that social networking technologies have redefined the way in which digital generation students—and the wider community—communicate, collaborate, and share information. Social networking sites like Facebook have the potential to transform the traditional learning lifecycle and extend it well beyond a student's departure from the tertiary education environment or institution. Current LMSs are attempting to integrate social networking features to compete with public social networking sites. However, the centrally controlled, "walled garden" approach to LMSs is at odds with the principles of Web 2.0 (see Chapters 3 and 14), and the fact that LMS-based courses traditionally expire at the end of a semester means that the potential is lost for embedded knowledge and communal learning to last beyond the arbitrary semester timeframe.

Technology and education are sometimes seen as areas which challenge and produce tensions for each other. Some researchers indicate that educators are less technology inquisitive and regard learning new technology as an administrative burden (Laurillard, 2002). It is imperative for learning technologies to be simple and transparent if they are to be embraced with equal effectiveness by both educators and students. Benkler (2008) argues that the networked information economy and society present a new social, technical, and economic environment within which the university

functions. McWilliam (2008), in her article entitled "Unlearning how to teach," provides useful observations and insight into how emerging pedagogies inclusive of the use of social networking sites can be considered. She suggests that the move from "sage on the stage" to "guide on the side" (reflecting a shift in focus from teacher-centered to learner-centered pedagogies) needs to be taken one step further to what she portrays as "meddler in the middle." This characterization positions the teacher and student as co-directors and co-editors of their social (and educational) world, challenging models and conceptualizations of traditional teaching in a number of ways. In particular, it situates the student within a learning landscape in which the teacher takes on a number of new roles: a co-worker in the thick of the action; an experimenter and risk taker; a designer, editor, and assembler; and a collaborative critic and authentic evaluator (McWilliam, 2008).

In this chapter the emerging prevalence and influence of social networking sites have been discussed, as applied to Facebook in particular. Some implications and recommendations for the use of this platform in terms of teaching and learning have been described and analyzed. Ultimately, which technologies are used by learners and teachers, and whether such tools will be used at all, will always depend on the specific pedagogical needs of a teaching situation. The growing popularity and use of ICT in general, and the emerging social and community affordances of Web 2.0 in particular, are widely acknowledged. Social networking sites like Facebook offer distributed expression and interaction with an authentic slice-of-life creative opportunity to share, respond to, and collaboratively develop collections of interlinked social knowledge. The specific focus here on Facebook has presented some ideas and illustrative examples whose intention is to prompt discussion and provoke thought in relation to the use of the technology in the reader's own context. Overall, ensuring the alignment of theory, pedagogical approach, learning outcomes, technology,

teaching methods, and assessment will make for the best chances of achieving effective learning experiences for students. Suggested is that the use of social networking sites such as Facebook are an emerging field of “cautionary educational possibilities” worthy of further exploration.

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KEY TERMS AND DEFINITIONS

Web 2.0: The term “Web 2.0” is commonly associated with web applications that facilitate interactive information sharing, interoperability, user-centered design, and collaboration. The term suggests the emergence of a second generation of

the World Wide Web, characterized by a movement away from predominantly static web pages to dynamic and shareable content and social networking.

E-Learning: Learning conducted via electronic media, especially the Internet.

Social Networking: The interaction among a group of people who share a common interest.

Social Networking Sites: Any of several websites that provide a virtual online community in which people with shared interests may connect, communicate, and collaborate.

Connectivism: “A learning theory for the digital age,” developed by George Siemens and Stephen Downes based on their analysis of the limitations of behaviorism, cognitivism, and constructivism to explain the effect technology has had on how we live, how we communicate, and how we learn.

Facebook: A social networking website that is privately owned and operated by Facebook, Inc. Its target audience is youths, and it was originally intended for university/college students, but it is now open to anyone aged 13 and over.

Social Capital: Represents the active connections between people, including trust, mutual understanding, shared values, and behaviors that bind together the members of groups, networks, and communities and make cooperation possible.

Web 2.0–Based E–Learning: Applying Social Informatics for Tertiary Teaching

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