

**Editor's Note:** Since the beginning of time, man has used tools and technologies to extend his ability to communicate, teach, learn, and record the human experience. Spoken, written and visual communications and thought have been amplified by technologies ranging from movable type to electronic and digital media. Global computer networks provide instant access to all of recorded history, current events, and the ability to communicate interactively, at light speed, with people and ideas everywhere. Powerful digital tools are changing how we learn, what we learn, and our ability to expand the knowledge universe.

**Blogs, Wikis, Podcasts:**

**Harnessing Technology for Enhanced Learning Achievement through Powerful Web Tools**

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**Abstract**

Technology and the employment of e-tools within the education domain have brought about unprecedented impact on educational deliverables and deliverances. Teaching and learning have equally been enhanced. Learning theorists have suggested tool-use has contributed to the evolution of human language and cognitive development (Wertsch, 1985). Tool-use extends our sense of self-identity, social identity, and our experiences of social relationships within particular places. Education professionals use specific kinds of technologies (analogue and digital) and are influenced by particular characteristics of the technologies they use (Watson, 2001). Our social and cultural understanding of *tools* and complex digital technologies affect our ability to use them for learning (Pierson, 2001). The context and conditions of these understandings affect how we know when, where, and why ICT belongs in our educational practices. A number of advantages of using blogs, wikis and podcasts have been identified which translates to the fact that technology has brought with it more convenience, independence to students learning and enable students to reveal their natural propensity to show their creativity.

**Keywords:** education, blogs, wikis, podcasts, pedagogy, enhance, e-tools

**Introduction**

For a long time, technology in educational institutions consisted of a room (or lab) where computers were situated and students had to leave their classroom learning environment and move to that room for a scheduled period of time. The contemporary higher education arena has many agendas to fulfil, including the need to maximise quality assurance processes, to ensure the research integrity of institutions, to meet the needs of a diverse student body that have higher expectations of their learning experience, and to endeavour to equip students with the necessary employability skills.

Digital technology plays a significant role in shaping the teaching and learning landscape in higher education. Indeed, it is expected that digital technology will play an increasingly significant role in higher education as members of the millennial and digital generations enter college, bringing with them new approaches to learning and consequent expectations of the classroom instructor (Caruso & Kvavik, 2005; Caruso & Salaway, 2007; Howe & Strauss, 2003; Oblinger & Oblinger, 2005; Prensky, 2001). The vast array of digital technologies with the potential to impact the teaching/learning process includes learning management systems, personal response system technologies, discussion boards, blogs, wikis, social networking sites, podcasts, and a plethora of web-based tools. The pervasiveness of information technology in today's world complicates the multiple demands on faculty by adding expectations of technological proficiency that far exceed the days of index card library catalogs that more senior faculty experienced as undergraduates. For example, many faculty grapple with the demands of learning new software to prepare digital course materials (Hanna, 1998; Twigg, 2003). The temptation for higher education faculty who must struggle to satisfy the customary triple requirements of research, teaching, and service is to relieve the pressure on themselves in the teaching area by teaching in a manner that reflects both their own learning experiences and preferences. This gives them more intellectual space for the research endeavor (Ouellett, 2004) but arguably fails to keep their teaching abreast of current understandings of what constitutes pedagogical best practice for their students.

This paper explores the potential use of e-tools such as blogs, wikis and podcasts technologies to support student learning. The article analyzes to what extent the instructors' use of these e-tools can nurture creativity in learning and teaching. Using an interpretative approach, the research has found that cited e-tools are powerful tools for developing creativity within the learning and teaching environment. In addition to identifying a number of factors that can be associated with the notion of creativity when using the tools, this study also considers certain conditions that need to prevail in the wider institutional environment if the cited tools are to be adopted as learning technologies. This paper attempts to present e-tools as an exciting new way of teaching and learning and demonstrate how Web tools can generate exciting new learning formats. It explains how to apply these tools in the classroom to engage students in synchronous and asynchronous world that provides information feeds and interactive learning. It offers specific teaching applications for online photo galleries.

## **Literature Review**

### ***Use of General Information and Communication Technologies (ICT)***

To support student learning, lecturers are encouraged to use ICT to create constructivist environments built upon constructivist learning principles. They use tools such as forums, chat rooms, wikis and blogs. Many of these are part of Learning Management Systems such as Sakai and Blackboard. Therefore, university staffs need professional development in ICT skills, and in the pedagogical use of ICT, to ensure that affordances offered by these tools can be realised. Furthermore, professional development must be continuous because ICT is ever changing. In response, a number of projects have been implemented at UNE with the aim of: identifying the challenges debilitating staff and students against pedagogical ICT use, formulating frameworks for staff professional development and enhancing student active learning through the use of ICT.

Studies in ICT in education are plentiful and often include models of evaluating ICT (e.g., Mandinach,

2005). Concerns include the complexity of the 'interaction between disciplinary content, learning outcomes and online, computer-based learning environments' (Sims, Dobbs & Hand, 2002: 137). This interaction is also illustrated in Muwanga-Zake (2007: 31), indicating an intercourse between curriculum, ICT and subject matter components. The curriculum dimension considers student learning styles, needs and preferences; provision of quality learning as perceived by stakeholders in an institution; enabling interactivity between participants in a course; and opportunities for assessment and feedback. ICT specifically has potential towards student-centred learning and research (Sims, 2006; Richardson, 2004). However, successful practical pedagogical applications beyond the communication of information are scarce, particularly in specific educational contexts. One reason for this scarcity is that the ICT industry rarely designs tools for specific pedagogical applications. There is a dearth of critical analyses of praxis beyond rhetorical ICT potentials. However, there is a need for research in ICT-supported pedagogy to keep pace with developments in ICT.

A need for continuous research for the most appropriate pedagogy for each ICT tool exacerbates the misuse of ICT in education, and leads to inter alia:

- § New or no rules or procedures / processes;
- § Ad hoc, trial and error;
- § Students becoming co-designers;
- § Continuous revision of ICT in education policies; and
- § ICT competing for more time, diminishing time for reflective assimilation of ICT in education

Critically, universities often expect lecturers to use ICT in education without allocating enough time for continuous professional development. Thus, ICT are acquired and implemented without the adequate training of staff (Sims et al., 2007: 136). In many HEIs, events involving the use of ICTs are motivated by the premise that the application of blogs and other e-tools within these institutions can be adopted without a clearly pre-determined pedagogical framework or any appropriate level of professional development of staff.

### **Blogs, Wikis and Podcasts as Learning Tools**

The emergence of the internet came with it numerous advantages to the enhancement of learning deliverances within the education, communication and marketing realms. In addition to pave the way to the creation of virtual learning environments, these etools have shown the propensity of technology to change the face of learning deliverables and deliverances. However by introducing new technology advancements and applying them within the education sector, this does not imply replacing traditional modes of classroom instructional methods. Research has indicated that no one way can be viewed as the best. Consequently educationists has realised that merging traditional and modern technology-propelled pedagogical methods have produced effective results. Blogs, wikis, podcasts, chat-rooms and other etools have proved not only effective and convenient, but has proved that technology can make learning a lot of fun as students and academics experiment with various tools.

Reardon (2008) refers to, "Tools such as community networks, social book-marking, wikis and blogs, podcasting, digital story-telling, project based learning initiatives, video blogging and other new technologies, as enablers of people to be producers of information" (Anderson & Weert, 2002). The National Centre for Education Statistics from the U.S. Department of Education titled its statistical analyst report (2000), "Teachers' Tools for the 21st Century: A Report on Teachers' Use of Technology" (*Teachers' tools for the 21st century: A report on teachers' use of technology*, 2000). In much of review of literature, it has been found, for the most part, an unquestioning and over-use of *tool* in reference to digital technologies and ICT. Consequently, the use of e-tools has reached unprecedented levels from the end to the 20<sup>th</sup> century and is even gaining more ground as more tools and applications are being invented.

### **Blogs as a Teaching and Learning Tool**

Communication is a fundamental part of learning. As instructors, academics need to communicate with each other, as well as with students, who also interact with lecturers and each other. Additionally, it could be argued that communication is a fundamental aspect of the human experience. It is not surprising therefore that a wide variety of IT-based communication tools have been developed, and that many of these have found application in the context of learning.

It is also true that, at least in more traditional "chalk-talk" forms of learning, participating (or chatting) by students is discouraged or prohibited. Furthermore, even when IT-supported communication is accepted in the andragogical (learning through life experience) space, the "older" tools such as email tend to dominate. Recently developed tools such as instant messaging and weblogs are often relegated, perhaps by virtue of their perceived informality, to a less preferred status. However, over the last few years, many academics have successfully incorporated blogging assignments into the coursework component of their classes.

A blog is a website where entries are written and displayed in a reverse chronological order (Scott, 2001). Blogs were introduced in the mid 1990s (Farmer, Yue, & Brooks, 2006: 263) and are easy to use because the user does not need sophisticated technical knowledge to create or maintain them (Bartlett-Bragg, 2003: 2). Blogs are primarily personal journal and opinion entries, which enhance a feeling of social interaction. Through a blog, a person gets a feeling of belonging in a wide range of professional activities such as psychological therapy, law, journalism, and research (Bartlett-Bragg, 2003: 2; Derkeley, 2008). To provide a justification for the pedagogical use of blogs, Papacharissi (cited in Farmer, et. al., 2007: 263) considered blogs to be 'transformational communicative technologies', which, according to Framer et al., (2007: 263), 'allow users to connect and become part of an active social corpus, while exercising and legitimating their personal expressive spaces'. Blog users inherently expect social transactions, communication, personal assertion and empowerment through blogs.

The high activity in the educational use of blogs is exemplified at university web sites across the globe and many leading ICT pedagogy experts, such as Ferdig & Trammel (2004), Armstrong, Berry & Lamshed (2007), Downes (2004), Richardson (2004), Kennedy (2003), O'Donnell (2005), and Bartlett-Bragg (2003) claim a myriad of pedagogical blog potentials such as:

§ Exchanging insights and information, which publishers are too critical to print;

§ Collaboration between diverse communities. Blogs can encourage integration of personal, peer, and expert narratives;

§ Hosting e-portfolios, archives and student publications;

§ Reflective or journal writings as an alternative to “traditional” forums or bulletin boards;

§ Group work, which could be synchronous or asynchronous within or between groups;

§ Learning portals;

§ Assignment submission and review; and

§ Sharing course-related resources

These blog potentials could enrich learning experiences and lead to deeper learning. Rosie cited in Bartlett-Bragg (2003: 2-3) elaborated that deep learning involves constructing connections between concepts in a context. Rosie added that deep learning is unlike surface learning where students ‘complete the minimum content necessary to meet assessment requirements’. Furthermore, ‘blogs offer a socially situated, student centred, contemporary, technical solution’ (O’Donnell, 2005), and catering for individual self-expression and socially driven learning (Farmer, *et al.*, 2007: 262). Student-centred learning is enabled in blog monologues that enhance constructivist cognition and meta-cognition (higher order thinking).

Moreover, students are conscious of their unrestricted postings to the public and are more careful about the way ‘they say things, how they collect their thoughts and summarise their understanding’ (Armstrong, *et al.*, 2007). Consciousness to the public relate with dialogues characteristic of Vygotsky’s social constructivism. Ferdig & Trammell (2004) highlights blog roles in social interaction and pedagogy, stating that:

*‘... knowledge construction is discursive, relational and conversational in nature. Therefore, as students appropriate and transform knowledge, they must have authentic opportunities for publication of knowledge’.*

O’Donnell (2005), drawing on Papert’s constructionism, explains that students converse about the transformation of their ideas for public participation – the ideas become artefacts, chronologically ordered by the blog, which are ecological environments of minds and constructs. O’Donnell quotes Lowe, who believed that a constructionist blog is able to cater for personal knowledge management within a social context. Thus, blogs could provide an opportunity for engagement and scaffolding within and outside classrooms. An example is a blog community about a book, which involved students and their parents (Richardson, 2004). Another example is a blog journal project, which encouraged tutor-student engagement in dialogue and so increased students’ participation by offering an additional mode of response and feedback, while monitoring and guiding individual students’ learning (McGuinn & Hogarth, 2000). Hence, teachers use blogs in place of standard class web pages to enhance deep learning (Downes, 2004).

At universities, blogs have become part of managing courses and learning especially through Learning Management Systems (LMS) such as the Blackboard and Sakai, and university students seem to be adopting these and other blogs. Successful pedagogical uses of blogs have been

abundantly reported (e.g., Richardson, 2004; Bartlett-Bragg, 2003). Pedagogically successful and valuable blogs involve careful planning and considerations (Bartlett-Bragg, 2003: 6). Ways of creating successful pedagogical blogs include making blogs mandatory and cultivating educationally sound perceptions of blogs among students (Cheung, Li, Lui, & Choy, 2006). Additionally, O'Donnell, (2005) advises for blog-use across 'classes over the duration of a degree course', instead of focussing on a 'specific assignment or a single semester'. These approaches allow students to grow into blog communities where they co-construct and define the course and learning strategies.

One of the universities renowned for applying blogs for teaching and learning purposes, the University of Sydney (at <http://blogs.usyd.edu.au/support/getblog.shtml>) advises that:

*'...the most successful blogs are those which consistently address a well-defined topic. A good blog will reflect that topic in its title, descriptions and (obviously) the content of its posts'.*

That is, the pedagogical objectives of a blog should be clarified to students before they start to blog. As an example, Farmer, *et al.* (2007: 264) instructed students at the inception of a blog to 'reflect upon and discuss course content that arose out of their learning experiences'. Thereafter, students should be scaffolded on creating good posts and feedbacks right from the blog creation (Huann, John, Yuen, 2005). To achieve blog growth, Bartlett-Bragg (2003) recommends five stages of students' guidance including: establishment; introspection; reflective monologues; reflective dialogue; and knowledge artefact. Bartlett-Bragg (2003) emphasises a need to pose structured questions as guides, especially focussed on students' experiences or recollections, adding that these motivate students. In fact, Farmer, *et al.* (2007: 263) integrated blogs into formative assessment exercises. Similarly, Armstrong *et al.* (2007) advise that the invitation for responses should be structured for serious thoughts. Passive invitations such as 'Comment' should be minimised in favour of reflective terms such as 'Discuss' or 'What do you think?' Thus, students' opinions, 'critical thinking and deep reflective qualities of learning' should have surfaced by the 'knowledge artefact' stage, which is recommended in Bartlett-Bragg (2003: 8). Thus, O'Donnell (2005: 1) conceives activities in blogs as a part of new ways of thinking that is happening through cyber cultural phenomena.

While blogs could encourage the freedom of expression as an important element of reflection, such a freedom could also be perceived as a potential weakness. Part of the weakness emanates from unrealistic expectations, exacerbated by the failure to provide clearly defined blog objectives and lack of developmental work with students. There is concern that the freedom accorded to students and staff to blog could lead to the misuse of blogs (Cheung, *et al.*, 2006), for example, for indecent discussions. There is also concern, as evidenced by Gartner's Hype Cycle (Drobik, 2009) of a possible loss of enthusiasm for blogs once their use is seen as being ordinary. Ordinary use of blogs includes a focus on personal celebrations of individual egos (O'Donnell, 2005).

Thus, Glenn (2003) argues that blogs lack rigorous scholarly work. Moreover, dissatisfaction with privacy and security might lead to a loss of interest to the extent that few blogs survive beyond a year (12 months) (Richardson, 2004; Downes, 2004). Hence, O'Donnell (2005) reports a complaint that blogs end up being "forced writing"; as lecturers try to make blogs pedagogically useful. Consequently, there is 'a gap between blog rhetoric and blog practice' (O'Donnell, 2005). Furthermore, as with other ICT, O'Donnell (2005) identifies a possible conflict of interest between a

lecturer's desire to improve pedagogy, and administrative interests to save money through the use of blogs. Often an institution's perception of blogs as 'an advancement over previous online learning environments' (Farmer, *et al.*, 2007: 263) comes at the expense of the quality of pedagogical improvement blogs could make. Additionally important are technical design considerations, which include the blog capacity to upload photographs, drawings and documents, as well as students' immediate access to blogs the moment they have thoughts to post (Armstrong *et al.*, 2007; Richardson, 2004; Downes, 2004). In consideration of the above, O'Donnell's (2005: 1) question about the location of blogs in pedagogical practices and Sims' (2006) suggestion of rethinking and remodelling pedagogy around blogs and other ICT, should be seriously researched.

### **Enhancing Course Content Through Wikis**

Wikis, short for Wikipedia, have also presented positive outcomes for learners within the higher education domain. In recent years there has been a growing trend to use *wikis as a learning* and *assessment tool* in Higher Education. Wikis are gaining ground as a learning tool in higher education (HE) (Bower, Woo, Roberts, & Watters, 2006; Choy & Ng, 2007), but relatively little is known about factors that affect the way students use wikis in the context of a course. Outside of Academia, there are at least two common ways in which wikis are used: as social software and as a tool that provides support for group projects and activities, with the former usually associated with open access and the latter associated with restricted (or authenticated) access (Elgort, 2007). The first use is best demonstrated by *Wikipedia* (<http://en.wikipedia.org/>) – a large collection of interlinked editable web pages that are created and kept up-to-date by users world-wide. Open-access wikis also exist for more specific knowledge areas, such as culture and art, education, politics, travel, science and technology. Key principles of wikis as social software are voluntary participation and bottom-up (or self-) regulation (Elgort, 2007).

An important factor affecting the nature of the wiki environment in such large scale projects as the *Wikipedia* is the sheer number of users that are able to freely contribute to the construction and management of a knowledge base. This type of open-access multi-user environment is able to self-regulate using for example such mechanisms as *soft security*, where the community of users insures the accuracy and appropriateness of the published information (Lamb, 2004). This factor also affects the type of navigation used in wikis: hierarchical or linear navigation options are not suitable because wikis are created and edited by a large number of users and deal with a wide range of user defined topics (Elgort, 2007). The most common way to navigate wikis is through hyperlinks, words or phrases linked to corresponding areas of a wiki. In addition, such large-scale wikis are usually work-in-progress, as they keep growing and changing, often in an *ad-hoc* way. Therefore it is not practical to read a wiki "from beginning to end", and users are more likely to search for a topic of interest and read around it (Elgort, 2007).

Restricted access wikis, on the other hand, can be viewed and/or edited by a limited number of trusted users. For example, a wiki can be used as a tool that allows a group of dispersed users, such as conference organisers, to work together to draft and fine-tune the details of an upcoming event, or for a group of authors or researchers to collaboratively work on a report or publication. Wikis are also used as a meeting management tool, which allows participants to suggest and negotiate an agenda and to publish minutes and comments after the meeting. Demarcation between the two types of wiki uses described above is not clear-cut, with some large restricted-access wikis (for

example, organization-based wikis) being closer to social software than to a group project tool. The use of wikis in a formal course of study, such as a university course, has common aspects with both of these two types of uses, but is also conditioned by the fact that it is perceived as a learning or assessment activity.

What is different about the use of wikis in the context of a course is that in the HE context, student learning and/or assessment activities conducted using wikis must adhere to such general principles of academic study as academic integrity, evidence-based argumentation, critical thinking and quality of sources (Elgort, 2007). However, students who are new to wiki-based learning, but who have used wikis in their private lives, are more likely to perceive them as a social software tool having little to do with academic rigour. Based on these prior experiences, when using wikis students may be inclined to give more weight to communicating an original opinion than to demonstrating that their opinions are based on sound research-based evidence, or to refer to web pages rather than journal articles, or to take a more relaxed approach to acknowledging sources (Elgort, Smith, & Toland, 2007). Thus a conflict may arise between students' approaches to wiki-based course work and lecturers' expectations in relation to the standards of student work in a university course. Furthermore, *learning* activities imply that students engage with information and resources using a particular learning environment (such as wikis) in order to achieve a pre-defined learning outcome, and "it is the planned outcome which makes learning a purposeful activity" (JISC: Designing for eLearning). However, the idea of an externally pre-defined outcome is not easily reconciled with the ethos of wikis as social software (Elgort, 2007).

Consequently, examples of university courses that use wikis in assessed group projects can determine the context of an academic course, as well as the nature of the task and instructions given to students influence their decisions about the structure and navigational aspects of group project wikis.

### **Use of Podcasts as a Learning Tool**

This section of the paper looks at how podcasts could be used for learning purposes in various subject areas and disciplines. In addition to enhancing practical experience and skill in using technological gadgets, the podcasts enable students to develop independent learning skills. There are six different models for using podcasts within the education domain. These are lecture support where the lecturer identifies a select group with which to work. The lecture support uses screen-casts, short summaries and video podcasting. Secondly, podcasts can be used to supplement field work during which the learners are based at a specific location from where they can hold interviews with an identified population of respondents. Thirdly podcasts can be used for practical lessons where visual guides to GIS software can be used in place of written instruction, video cast for specimens' examination. Topical issues can also be taught through podcasts such as the prevalence and prevention of the HIV/AIDS pandemic within a specific community. Podcasts can also be used as a means of assessment where students podcasts instead of fieldwork reports. Podcasts can even be utilised when providing feedback to student assignments or assessments.

The impact of podcasts on teaching/learning has been overwhelming. On learning the impact has been identified as providing flexibility and easier learner control where students are able to look at podcasts at their own time convenient to them and be able to do their work gradually and piece-by-



piece thereby creating freedom of learning. Podcasts also provide a new and convenient way of assessing students. Additionally, podcasts enhance comprehension of subject matter and enable students to re-visit matter already learnt. Through the use of podcasts students are able to capture informal knowledge, thereby helping cover knowledge gaps and missed material. It also promotes personalised learning experience of learners thereby inculcating an enriching learning environment. A virtue of the podcast system is that it is, to some extent at least, a push technology, contrasting with the pull technology that is characteristic of many internet applications. The podcasts are automatically delivered to the student; the student does not have to remember to fetch them each week.

There are several lessons to be learned about the pedagogy of using podcasts. First, a podcast is (currently at least) an audio event only. It lacks the impact of an audio visual presentation. This means that podcasts should be *short*, and should contain material that is *vivid* and *arresting*, and supplementary to what has been covered in class. Secondly, the material delivered in a podcast should be *provocative* and should aim to make students *think*. Thirdly, it should be remembered that, immediately after listening to a podcast, the student will most likely listen to music. This means that thinking time needs to be included within the podcast itself. Do not be afraid to leave gaps of silence embedded in your podcasts. If you want your listeners to think about a question, give them time *within* the podcast to do so - they won't do it afterwards. Fourthly, the podcasts should be *embedded* in the curriculum; students should see that there is advantage to them in listening. In my course, this advantage was apparent in that assessment was by way of a learning journal, and students knew they could get ideas for this journal by following thinking leads given in the podcasts.

### **Developing Creativity**

Research has shown that exposure to a myriad of computer applications results in the provocation of the inherent propensity in human beings for experimentation. Cognitivists, social constructivists and behaviourists have also concurred that human beings have an inherent instinct for experimentation, especially with concepts that they will have been exposed to but would take the concept a step further in an attempt to have a better understanding of their environment. The same applies to students as they experiment with technology beyond what they will have been taught. Within the context of using blogs, wikis and podcasts, students are able to draw numerous lessons and skills, thereby enhancing their capacity to be creative. A number of studies have attempted to consider how the learning and teaching environment can influence the development of creativity. For instance, Grainger et al. (2004) identify what they describe as a cocktail of ingredients in developing a creative teaching environment. This cocktail includes a combination of enhancing the session content, teaching styles, and the learning experience. Other techniques for stimulating creativity within the learning and teaching environment have also been suggested. These techniques include preventing groups of friends from working together to circumvent conformity and exclusion, allowing free flowing discussion about ideas and opinions, having a relaxed learning environment, and using humour to parody situations (Grundy & Kickul, 1996; Morrison & Johnston, 2001). Donnelly (2004) argues for a paradigm shift from teaching to learning and that creativity in the curriculum design process is crucial to this. As part of this process, he argues that risks need to be taken. Technology can be influential in developing creativity amongst learners. In her comprehensive review of the role of information communication technologies (ICT) to support creativity in learning, Loveless (2002) notes six features of technologies that can be used to support creativity:

provisionality, interactivity, capacity, range, speed, and automatic functions. Novelty could also be added to this list of features (Allen, 2003). However, Allen notes the assumption that new e-learning technologies can provide better instruction and further comments that actually, new technologies can “expose instructional deficiencies and exacerbate their weaknesses” (p. 196). Nevertheless, Allen further argues that the novelty of technology can draw attention, develop curiosity, and make experiences memorable. In identifying a number of “damaging dichotomies” when trying to understand creativity, Prentice (2000) suggests that the popular distinctions between work and play are inhibiting and need to be reconsidered. Prentice continues to suggest that information communication technologies have blurred the boundaries between work and non-work and between leisure and learning.

### **Student Expectations in Today’s World of Learning**

Digital educational technology is poised to play a significant role in the lives and work of both students and faculty in higher education (New Media Consortium [NMC] & EDUCAUSE Learning Initiative [ELI], 2008). Current college students, members of the millennial and digital generations (Howe & Strauss, 2003; Oblinger & Oblinger, 2005), bring with them the expectation of being engaged with new digitally mediated approaches to learning (Caruso & Kvavik, 2005; Caruso & Salaway, 2007; Levin & Arafeh, 2002; Prensky, 2001, 2005). By the time our current kindergartners enter college, they are likely to have amassed considerable exposure to such digitally mediated learning. For instance, Oblinger and Oblinger (2005) noted that among the “Net Generation (NetGen)” students, 20% began using computers between five and eight years of age. Ouellett (2004) suggested that, in contrast to the dominant teaching modality when faculty themselves were students, today’s students prefer to learn in an environment that favours activity and experience and fosters immediate engagement. Today’s college students have highly formed perspectives and expectations about the role technology should play in their learning (Oblinger & Oblinger, 2005; Salaway, Katz, Caruso, Kvavik, & Nelson, 2006). Consequently, faculty who are not prepared to adjust their classes and curricula to the demands of an increasingly diverse and digitally aware student population may well marginalize the relevance of their fields (Howe & Strauss, 2003; Levin & Arafeh, 2001). Kuh and Hu (2001) noted the connection with prior technological experience in their finding that older first-year college students were less likely to use digital technologies to complete assignments or discuss course topics with peers and instructors than their younger academic peers.

### **Challenges and Opportunities Drawing From Using E-Tools in HEIs**

Despite successes that have been posted by e-tools, there remain challenges which users and HEIs and other users have got to contend with. Although the potentials of ICT such as blogs seem to be obvious, universities find challenges in using them pedagogically (Muwanga-Zake, et al, 2010). The authors further note that there is dissonance between blogging and pedagogy, or rather a gap between rhetoric about blog potential and blog practice, which has prompted this investigation and professional development in the use of blogs at various HEIs in different countries Preliminary research findings have shown that fundamental implications for professional development exist in pedagogical uses of Information and Communication Technologies (ICT). Blogs can also be a fantastic way to record one’s progress on projects, take notes, shares findings. Younger students, being the more tech-minded people, can help make this happen within their learning environments. But we may have a few hurdles to jump before we can get there. However, blogs have been found to

present some challenges.

There is a number of the obstacles users face in using blogs in institutions. First, blogs do not seem to be very popular in institutions as a way of communication or marketing of products in the private sector. They tend to be very personal and cannot be used for professional communication or interaction. It has been observed that while many companies have executives and employees who blog regularly, but this is still more of the exception than the rule. Second, users are either hesitant or scared to use new tools like blogs and RSS readers. Third, people assume blogs are time consuming and require expert writing skills which do not seem to be the case. Fourth, in blogging and RSS reading, users get overloaded with unstructured information hitting them in every direction resulting in some cases in confusion and mix-ups. The last thing they want is another resource or web site to worry about. However, despite the aforementioned setbacks and apprehension on the part of users, need to figure out how to communicate the fact that blogs and RSS are essentially highly-focused channels of information that, when used properly, can be more powerful than other forms of communication.

In reality, most students write many more entries than the minimum required. They also read each other's entries, and comment on them, as do the instructors. While the blog writing is motivated as a class assignment, student enthusiasm for the activity is contagious: Once a critical mass of active student bloggers is established (and of course, there are some who steadfastly refuse to have anything to do with it, incentives and penalties notwithstanding), off they go! The learning that occurs is at least bifocal. Firstly, when the students reflect on what they have learned in class, they are in the position to extract some of their tacit understanding and explicitly document it in the form of a blog. That this reflection is at least in part organizationally focused is an extra benefit, because the students often pepper their entries with details about their work contexts and why (or why not) a particular IT application would be appropriate. Secondly, by both reading and commenting on others' blogs, so they start to learn from each other—without the instructor being too directly involved. Lecturers also read and comment on each blog entry as well, independently of the students, giving constructive and positive feedback where possible. This can be a time-taking exercise, depending on the size of the class. It is best to check the blogs every few days or less in order to prevent an overflow of unread, uncommented new blog entries from building up.

Weblog tools are ideal brainstorming applications: Simply create the discussion topics as entries in the class blog and then ask everyone to login and go to the class blog. They can see the discussion topics—and submit their brainstorm ideas as comments. They can also comment on each other. For introvert students this provides a much less threatening opportunity for them to communicate and share ideas at their own pace. It is all down to communication—and finding the right tools for the right people at the right time for the right task. But blogs are versatile and definitely deserve greater attention in the classroom.

Students who have used the podcasts at one time or another have reported that they found podcasts immensely helpful. However these students were in the minority. This seems to be because the facility is most useful to students who have their own PC (and ideally also an MP3 player), and broadband access. However, while the podcasts can be downloaded on a dial-up connection, this is slow. Broadband access is of course a problem for many students living in private rental accommodation, since broadband providers typically impose a 12 month contract.) Of course,

students could access the audio clips through the virtual learning environment, but many did not do so - presumably because this is a reversion to a pull technology. In these respects, podcasting may be a learning technology for the future rather than the present. Nonetheless, the results of my experiment suggest that the podcasts have, for the students that access them, measurable pedagogical merit.

Wikis have also presented both opportunities and challenges for users. The use of wikis can be used as a platform for student course work is also complicated by the absence of a formal structure in a wiki, as, in its core, a wiki is simply a collection of individual web pages. One may argue that the structure of an essay or report presented in the form of a traditional text document also needs to be created from scratch. However, an important difference between creating a structure for a text document and a wiki is that conventions about the structure of an academic essay or a project report are reasonable well established, while this is not at all the case for wikis. Furthermore, as a rule, the reader approaches a written essay in a linear manner, following the sequence prescribed by the author. Even if the reader decides to circumvent the linear approach and to go directly to a specific section of the written work, using the table of contents, the reader still has a clear sense of where s/he is within the overall body of the work. In developing a wiki, on the other hand, decisions need to be made not only about how information is structured but also what navigational support (if any) is provided to the reader, and these decisions are crucial to the ways in which the reader interacts with the wiki. Navigational metaphors for a wiki may be borrowed from different genres of communication, such as a paper-based document or a conventional website - a decision which is likely to shape the way the wiki is perceived by the viewers. On the other hand, as outlined above, a *native* wiki approach to navigation is through non-linear hyperlinks and using the search function. The question arises, however, whether such non-structured navigation is compatible with conventions adopted for course-based work, e.g. for an academic assignment.

### **Implications For Professional Development and ICT Pedagogical Use**

The increased number of online courses at various HEIs across the globe has led to the increased expectation and demand that lecturers use blogs in their teaching. However, there are challenges concerning workloads and the provision of support and time allocation for professional development. This has been exacerbated by the increasing number of student seeking opportunities and skills in HEIs. Furthermore, as adult learners, it is likely that staff themselves will be the ones who will make the choices about when and what they want to learn about blogs. In the light of this, the provision of an open blog policy makes sense as it provides staff with the opportunity to experiment with blogs. Although the *laissez-faire* blog could be manifestations of freedom of expression, academia has yet to extend blog use to pedagogical discourse. To do so, entails professional development that includes blog technical skills, and planning for blogs that involve students in social constructivist and active learning blog environments. Therefore, further professional development is planned at UNE. This will be in accordance with Bartlett-Bragg's (2003) model on planning and designing pedagogical blogs, and will also draw from Framer *et al.* (2007). As a first step, a blog on blogs, named Blogging @UNE (<http://blog.une.edu.au/blogs/>) has been developed to provide guidance and links to exemplars of pedagogically successful blogs. Blog seminars and workshops can also be organised. Staff have been encouraged and supported to start pedagogical blogs. Additionally, questionnaires have been applied to staff and students to understanding of the challenges and needs to create pedagogical blogs. It has been realised that

professional development activities such as those described above require designated time as matter of policy. However, UNE needs to identify and employ ICT specialists to support staff on a daily basis. Furthermore it has been recommended that ICT in Education lecturers be designated time to highlight the pedagogically useful features of blogs and ICT in general. Other imperatives include; managing change among staff to re-examine their teaching strategies with a view of incorporating ICT in a manner that supports constructivist and active learning; and shifting towards virtual and open spaces in which the distinction between lecturer and students is obscure. As UNE tends towards more online and off-campus distance education, UNE is planning to improve its ICT capacity. For example, more LMS platforms are being tested and blog capacity can on request be extended to upload larger files. The short ICT life spans have to be considered too. For example, the cost-effectiveness of staff to perfect the use of a selected few ICT tools, such as blogs, than to adopt every new ICT on the market is being investigated.

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