Theme: Formal Education

Using Web 2 Technologies to Enhance 21st Century Distance Education

Henry Paul, Open and Distance Learning Projects Co-ordinator, Distance Education Unit, Ministry of Education, Trinidad & Tobago henpau@hotmail.com

Introduction

The debate about the use of technology in distance education continues to present both challenges and opportunities for educators and learners. As discussions about the concept of the digital natives and digital immigrants (Prensky, 2001) abound, the institutions of distance education must respond to the needs of the 21st century learner in non-traditional ways which, to a very large extent must be underpinned by the use of technology. Extensive Internet use together with the use of mobile technology, especially the cell phone, has created new opportunities for the migrating of these technologies into the educational domain; if only to provide more meaning and diverse ways of communicating, collaborating, sharing and presenting educational content to learners with the principal objective of improving the way learners learn.

Context

This approach is rooted in the constructivist theories of education and also includes Dewey's idea of the 'active learner' where learners participate in their learning but more significantly, construct meaning. Engaging the mind, the reflective activity as described by Dewey stresses importance of language and is emphasized by (Vigotsky 1962, Gurain, 2006). Learning is seen as a social activity and the need to use conversation to interact with others and the application of knowledge are fundamental components of progressive education (Dewey, 1938). The use of social technologies can therefore enhance the learners' experience.

 Web2 technologies fit seamlessly into this idea of progressive education. They allow for the use of low-cost technologies in the teaching/learning transaction at all levels of the distance education system. From administration to content development and delivery, there are new and interesting platforms for enhancing the classroom operation as well as teaching/learning, assessment, research and administration in distance learning institutions. This presentation will attempt to highlight some of these low cost and free technologies that can be immediately used by educators and distance learning administrators to make more efficient and effective, their day-to-day activities as tutors and administrators.

Web 2.0 educational platforms continue to revolutionize the approach to teaching /learning whether at the primary, secondary or the post secondary sectors of education systems throughout the world. More significantly, is the fact that they are impacting profoundly the way traditional schools, open schools and universities deliver education to students. As the demand for universal primary and secondary education increases including expansion of undergraduate spaces world-wide, in both developed and

developing countries; there is need to widen participation and exposure to quality teaching, both face-to-face and distance. Web 2.0 provides a mechanism for 21st century learning/teaching and assessment, including contact with school/university communities, interfacing with industry and in a real sense stimulating greater efficiency and effectiveness to meet the needs of the changing student cohorts-the digital natives (Prensky, 2002) and also mature students who need to study while continuing to be employed.

One of the immerging pillars of the ecosystem of higher education as well as open schools is therefore the use of web 2.0 technologies. The others include the changing student profile and population, the requirement for improved efficiency and effectiveness in teaching and learning, extending learning beyond the classroom, expanding educational access to individuals in non-classroom environments and the emphasis on sound constructivist and constructionist teaching/learning pedagogies. Distance learning is helping to fulfill this universal demand in education world-wide. As the demand for basic education grows, distance learning continues to expand in both developing and developed countries; and if this trend continues, as it will, distance learning is set to become a major facilitator of learning world-wide with great expectation form all educational stakeholders-students, tutors, course developers, administrators and educational institutions.

Why Distance Teaching & Learning

The UNESCO millennium goals with respect to education aim to achieve a universal primary education for all by 2015. This goal is unlikely to be achieved without the use of distance learning modalities. Distance learning offers to the learner the flexibility of study out-side of the classroom and the flexibility of learning anywhere, anytime. ICT technology enhances the possibilities of learning by distance beyond the traditional printed mode. Internet access provides a very powerful medium to enhance content delivery using different media- text, video and graphics. However there continues to be the issue of equal access to all and the cost of internet connectivity in many developing countries. In spite of these challenges however, the massive impact of distance education world-wide and the opportunities offered to millions of individuals including the marginalized, the rural poor and women in particular have underscored its value as a means to education, especially in developing nations. Distance learning using Web 2.0 significantly enhances the teaching/learning experience (if used effectively and efficiently) and expands the traditional classroom environment to an on-line communication, collaborative and sharing space with student and tutor support. It emphasizes the social nature of education.

Blended Learning

Blended Learning provides the context and the best mechanism for the promulgation of web 2.0 technologies, including other low-cost technologies in distance education. There is increasing evidence in literature of the positive impact of Blended Learning on students' performance in higher education. Traditional teacher-centric approaches allow for passive reception of educational content, do not align with learning styles of many students,   is classroom-centred not student -centred, do not allow for real-world experiences and generally focus mainly on summative assessment. By itself, the traditional teach-centric, broadcasting approach to

content delivery in higher education is not meeting the varying needs of today's technology-enriched students, operating in an engaging technologically advanced social environment.

More significantly, the cohort of mature working, part-time students who generally access the evening programmes at secondary and higher learning institutions are hampered by the limited contact time with the lecturer (generally 3 hours per week). There is a need for such students to communicate with their lecturers beyond the class room session, whether in groups or individually; to be exposed to extra sources of content, both print and on-line and platforms for communication, collaboration and sharing of ideas. Blended learning provides these advantages. Social low-cost technologies are available for use in the classroom transaction and beyond in a blended learning context where the course delivery is targeted towards the different learning styles of students. There exist therefore a symbiotic relationship between the distance learning methodology and web 2.0 technologies which needs to be exploited to enhance the distance learning modalities of teaching/learning if only to expand the reach of higher learning institutions to their communities of learners.

Why web2.0 in Distance Education

Distance education if it is to have any relevance to the 21st teaching/learning environment must cater for the individual difference of learners while allowing teachers to maximize their efforts in providing engaging, collaborative, dynamic learning spaces which offer mechanisms for learning and discovery "24/7/365". It must also use a range of methods and media, including on-line and/ or real-time events to allow students to engage in learning projects which mimic the real world. Web 2.0 offers these features for teaching/ learning generally. Its use is limited only by the imagination and confidence in utilizing the features by the teacher./lecturer. Traditional teacher-centric, linear methods which focused mainly on the passive receipt and acceptance of knowledge, augmented by the traditional summative assessments are inadequate to meet the teaching/learning challenges of 21st century students. It is also not aligned to the constructivist learning theories in the educational literature which underscore the importance of student construction of knowledge and active participation in their learning.

Distance learning in the 21st century therefore must progress beyond the traditional text-based materials which were posted to students. Such content was generally studied by the student (alone) with very little interaction with other students, assignments and/or tests completed and returned to tutors. This was a tried and tested method which allowed many students to access education up to post graduate level. The immergence of technology, particularly internet and other communication technology in the late 20th and early 21st centuries have radically transformed distance learning to a more multi-media, dynamic, social learning environment with real-time or asynchronous teaching and learning with the ability to find electronic resources to augment course materials and to allow for more social engagement by students and tutors. Distance learning can now be undertaken by universities and distance learning institutions using a range of delivery methods including radio, television, video, CD/DVD, audio cassette tape, ipod and video-podcasting, cell phone, e-learning platforms, Virtual learning environments and learning management systems, most of these underpinned by use of the internet.

Web 2.0 provides the most dynamic, creative, social responsive learning platform which improves learning; including distance learning by exposing the social contexts in which teaching/learning takes place. It invigorates both the teacher and learner to use different learning channels for knowledge acquisition and research, allows for real-time collaboration, discourse, editing, formatting, publishing and archiving of content. It also allows for real-time, on-line testing and assessments with immediate results. It therefore provides for matching learning styles of individual students with varying delivery modes while encompassing the traditional lecture augmented by the range of technology-derived delivery methods. Web 2.0 focuses on the process of learning rather than the content for learning and has therefore transformed distance learning from a peripheral educational concept attracting only a minority of students to a main stream education option for thousands of individuals world-wide, who wish to pursue education but whom, for a number of reasons, are unable to return to the classroom.

What Web 2.0 offers Distance Education

The range of web 2.0 facilitations for distance education provides endless possibilities for dynamic engagement between student and student, student and tutors, student, tutor and experts in an all-embracing, borderless teaching/learning environment. These technologies do not replace face-to-face teaching nor are they intended to supersede the impact of the tutor/lecturer in teaching. They add to the teaching/learning possibilities by moving teaching/learning beyond the classroom and into a dynamic social environment that fosters social learning and equal participation limited only the one's ability to gain access. The focus of this paper is on free web 2.0 popular platforms used in higher education and by institutions offering distance education.

The first category is social software use principally for group discussions:

a) **Blogs**

Blogs are free systems for publishing thoughts or ideas around a theme or topic initiated by the tutor, the student or expert in a subject area. These are publicly displayed as time-ordered articles (called posts). Blogs allow for individual or group posting and can be integrated into discussions on an LMS (e.g. Moodle). This feature can be used to develop a reservoir of knowledge using the post and comment mechanism. Here bloggers pool their collective ideas together as they post and receive comment and make refinement of ideas on posts.
Blogs can also be used to make course announcements and provide feedback to students.

b**) Wikis**

A wiki is a collaborative website which entertains the easy creation and editing of any number of interlinked web pages by anyone with access to it via a web browser using a simplified language or a WYSIWYG text editor. Wikis have a range of usage in a distance education context. They may be used for scaffolding in any subject area- from subject themes to page structure and content and to provide feedback. They are most desirable for collaborative class projects involving groups of students for incrementally adding content, documenting tasks editing material and can also be used for the development of student portfolios. Wikis also allow for the sharing of on-line resources**.**

The second category is used for storing and sharing of educational content in different media formats:

c) **Media-sharing services**

A critical area of distance education is the finding and sharing of resources for teaching and learning. Media-sharing services allow for the pooling of such resources in different media-text, audio, still-picture and video; creating valuable teaching/learning resources limited only by individual and group creativity and innovation. Among the more popular free Media-sharing services available for use in distance education are:

a) **Slideshare** for uploading/downing presentations;

b) **Scribd** for uploading/downloading documents;

c) **Deviant ART** for uploading/downloading art work;

e) **EduTube** for uploading/downloading an extensive range of short movies in almost any educational subject.

f) **iTunes** for uploading/downloading of podcasts and vidcasts;

g) **Frickr/FrickrCC** for the uploading/downloading and sharing of photos and more importantly, for finding Creative Commons licensed images which can be used as educational resources. Frickr also provide for annotations to be linked with distinctive sections of an image and for comments to be placed on the image as a whole. It therefore facilitates teacher/student explanations, class discussion, and collaborative comments in teaching/learning in distance education.

h) **Podcasting** used together with MP3/4s and other mobile devices (e.g. cell phone) allows the user to listen to audio content. Such content can be easily updated and placed on computers/servers for student access anytime, anywhere.

i) **Vidcasts** are podcasts with video and are also linked with RSS (Really Simple Synacation) streams which provide up-to-date information on a range of subjects. Here the user is able to playback/download new content to mobile devices-audio/video player, cellphone, computer etc.

The implications for distance education using these web 2.0 assets are significant and far-reaching. These are essentially free platforms with very little technology requirement other than the use of a computing device and internet connection. For example, podcasts can be used to record lectures, demonstrations etc. for distant learners to download and utilized. Such content can be used for reinforcement of concepts or for access by students who missed sessions or can be used to meet the individual student's learning requirements.
Lectures can be video-taped and placed on a video sharing system (e.g. Google Video) for accessing by students. Thus instructional videos and lectures/seminars can be hosted on free open spaces – Google docs, EduTube for access by students.   Google Video provides for longer, better quality videos than YouTube and also stores a range of educational videos. Students can also harvest free and open video/audio resources to

create a pool of shared resources in any subject area as part of a learning community. Where there is unreliable internet connectivity for real-time activity, resources can be downloaded onto storage media- pendrives, CD, DVD and packaged for students.

The third category involves searching and locating on-line resources

Social bookmarking

As part of the research efforts required in distance education teaching and learning, social bookmarking services allow users the facility to record (bookmark) webpages and tag such records with relevant descriptions that explain the page being recorded.   Two major examples of this are Bibsonomy and delicious. Users can create a reservoir of records with common tags; such tags can be used by anyone to search for bookmarked objects by possible tags. Items classified with many tags may be considered as important and thus socialbooking services can in some instances be more effective in finding internet resources. They also aid in the development of communities of users who are interested in the same topic or subject. Teachers and learners can over time construct collections of relevant resources in any subject area and may also use such system to bookmark resources that are not on the web.

The fourth category represent teaching web 2.0 tools

Web 2.0 Teaching Tools

Classtools.net This site allows flash templates to be embedded into blogs, wikis and websites

Exam Builder This tool enables one to create online test in a Web browser for publication. Tests can be customized for online registration and student resits. It shows students scores analysis.

Quiz Center – A very useful tool for teachers; This free quiz generator is flexible allowing for creation, publishing and grading of quizzes online.

Easy Test Maker –   This tool provides for creating different types of test including multiple choice, fill in the blanks, matching, short answer, true or false. It includes a spell check function.

Charles Kelly's Online Quiz Generator –This is very popular multiple choice test generator for tech-savvy college instructors which allows choice in terms of formatting the data.

JavaScript QuizMaker – Using this quiz generator one can cut and paste into a Web page using the JavaScript provided. It enables easy hosting of test on a class webpage

Conclusion

Web 2.0 technologies therefore allow for a re-engineering, re-focusing and re-organization for the teaching/learning transaction for distance learning. They expand the original linear, one way interface between teacher and learner to a multi-dimensional teacher/learner engagement which includes the use of text, audio, video and graphics, separately or collectively, on platforms that enable synchronous or asynchronous communication, collaboration and sharing of ideas and /or content.

Web 2.0 enhances student participation and engagement in distant learning via teacher-student, student-teacher, student-student and student-expert communication, collaboration and sharing; extends assessment beyond the traditional summative mid-tern or end-of-term examination that is the focus in tradition face-to-face teacher centric classroom instruction to include a range of formative assessments which can be on-line or off-line; helping to chart students' progress throughout a course. Web 2.0 socializes education enabling students to take responsibly for their learning and allowing them to contribute individually or collectively to the knowledge-base of any subject area. It enhances the distance educational experience for students making learning interactive and engaging rather than passive and lonely and personal.

Web 2.0's major asset to 21st century education in general and distance education in particular is its basic requirements- a computer and access to the internet (not necessarily high-speed connection though this is an advantage wherever it exists). Most of the social platforms of web 2.0 are free and can be adapted to whatever infra-structure is available in an institution's educational environment. Its use in formal education and distance education is limited only by the creativity, ingenuity and flexibility of the teacher/lecturer. It is easily integrated into existing technology e.g. learning management systems (LMS) and can also be used by itself. The most significant question to be answered about web 2.0 in distance education at this time is: Are our teacher/lecturers and institutions ready and willing to use this technology to effectively enhance distance education?   There are some "islands of excellence" in terms of use by lecturers who have recognized its power but more institutional support and incentives are required for sustained web 2.0 institutional use.

References

Dewey, J. (1938). *Logic: the theory of inquiry,* New York: Holt and Co.

Gurian, E., H. (2006) Civilizing the Museum : The Collected Writings of Elaine Heumann Gurian, London ; New York: Routledge,

Prensky, M., (2001) "Digital natives, Digital Immigrants", *On the Horizon* NCB University Press, Vol. 9 No. 5, October.

Vygotsky, L. (1962). *Thought and language*. Cambridge, MA. MIT Press.

https://www.blogger.com/start

http://edublogs.org/

http://www.21classes.com/

http://www.myblogsite.com/

http://en.wordpress.com/features/

http://web20teach.blogspot.com/

http://wikieducator.org/Main_Page

http://en.wikipedia.org/wiki/University

http://en.wikiversity.org/wiki/Wikiversity:Learning

http://edutechwiki.unige.ch/en/Main_Page

http://en.wikipedia.org/wiki/Distance_Education_and_Training_Council

Teaching Tools: http://web20teach.blogspot.com/