KEYNOTE PAPER 2

HARNESSING TECHNOLOGY FOR LEARNER ENGAGEMENT

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ABSTRACT

This presentation outlines the practice of engaging learners with emerging technologies while learning about the use of technology in teaching and learning. Four case studies are presented to illustrate the design of instructions where learners become co-designers of their learning spaces allowing for personalized learning to happen. The impact of the practice was examined through systematic observation and investigation into methods of using Free open source tool such as Moodle to manage the virtual learning and classroom, and Web 2.0 tools such as blog, wiki, Facebook and YouTube to engage learners with reflection, social interaction and assessment. Pedagogical change in the context of researching own practice is examined through student centred action research. This includes the use of problem based learning and collaborative teams. Facilitating learning with technology requires a change in practice involving mentoring, coaching and scaffolding. Harnessing technology for engaging learners requires creativity and hard work.

INTRODUCTION

History in education taught us that technology alone does not promise effective learning (Reiser, 2001). Any new technology to be used in education requires considerations of the pedagogy and the curriculum. New technologies, if underpinned with sound pedagogical principles, will enable the development of the 21st century literacy and learning. Curriculum and instruction of the 21st century requires learners to be engaged in various ways of student centred approaches; thus, enabling self directed learning while developing the 21st century skills. The 21st century skills may be perceived as a range of cognitive skills such as creative and critical thinking along with social skills namely, ICT, media literacy and survival skills pertaining to life and career together with knowledge (Partnership of 21st of Century Learning, 2004; Educause, 2009).

In the last decade, higher education institutions in many parts of the world have been ramping up efforts to prepare future graduates who would meet the manpower needs of the nation. New digital technologies are brought into the classrooms, libraries and dorms. Networks are set up and broad bands are increased. However, universities and colleges are yet to embed the Interactive Learning Technology (ILT) and Virtual Learning Environment (VLE) fully into teaching and learning. Though it is taking longer than expected, the blended model of VLE
use is gaining ground and student centred pedagogies are being used as the way to engage academic staff and students in the 21st century learning.

This paper will share my experience in engaging teachers and teacher trainees to learn about technology and to use technology to develop the needed skills. As an instructional technologist, staff developer and teacher trainer, I am constantly challenged to provide models of effective practice encouraging academic staff and future teachers to alter their teaching methods and to harness technology in engaging learners in their learning. Scholarly endeavours to inquire about problems in teaching, to reflect on pedagogies and to share understandings has helped me to improve student learning, faculty learning and critical thought processes in their current and future lifelong learning.

BACKGROUND

Recent announcement made by the Vice Chancellor of University of Malaya (UM) that the organization has chosen a learning management system (LMS) – Moodle – as a bold step in moving forward to transforming teaching and learning in UM. Moodle is an acronym for “modular object-oriented dynamic learning environment,” developed by Martin Dougiamas since 1999. Moodle is written by educationists: therefore, has been developed to contain features that education wants it to have (Kenny, 2008). We believe that technology will help develop the graduate attributes, as such Moodle can be the base and structure for the 21st century skills to grow.

Plans are being laid out to ensure that the LMS will be more than just a repository of teaching materials uploaded by the lecturers for students to download. As Moodle is designed based on social constructionist pedagogy principles, it will be effective in a learning environment where learners are constructing and sharing with others. Our emphasis is on the development of skills and knowledge required by lecturers to facilitate students learning to learn, to live productively in a digital society, and on creativity and innovation with technology. The plan involves providing support and training to help the lecturers to move through the transformation stages as outlined by Rieber and Welliver (1989): Familiarization; utilization; integration; reorientation; evolution.

Face-to-face training of small groups of lectures are conducted to familiarize them with Moodle functions and to help them set up and use the LMS as a supplement to the face-to-face classes. Future trainings and ongoing support will ensure that the lecturers are engaged with the technology, as well as the new pedagogy, and are able to evolve to a level where the use of the tool becomes an irreversible part of everyday classroom practice. This process hopefully will significantly improve students’ learning.
CURRICULAR AND PEDAGOGICAL CHANGE

In order to provide models of effective practice I have to be constantly engaged with the technology, practicing and researching on the tools and the pedagogy to suit diversified learners. In the last three years I have been researching on my practice and have introduced Web 2.0 tools to the teacher trainees and graduate students. My research team has examined the use of blogs for reflective learning; Wiki for knowledge creation; Facebook as a tool for personal and professional development through E-portfolio; and YouTube as a tool for assessment and feedback. We are currently exploring the use of Web 3.0 to facilitate the creation of virtual learning spaces by students.

My courses have been designed with learning outcomes to develop teachers who are able to adopt and adapt technologies for learning and teaching. Simultaneously, through the process of adaption, these teachers will be able to create innovative products and methods to engage and empower learners with technology. Cooperative learning enhances teamwork and builds leadership skills. The curriculum deemphasizes content knowledge and enhances critical thinking skills through the use of project oriented problem based learning (PoPBL) and problem based learning (PBL). PBL helps to increase students’ active engagement with content which they must apply and with authentic problems which help them to research and develop inquiry skills and at the same time develop collaborative as well as individual achievement. In order to change practice with available technology, I regularly carry out inquiries into my classroom practices, document the work and make it available for review by peers at conferences and seminars like this.

SCHOLARSHIP OF TEACHING AND LEARNING

The research activity on Personalized Learning Environment and Students Engagement (PLEaSE) attempts to explore the scholarship of teaching and learning (SoTL) in a scholarly teaching practice where technology is integrated into the teaching and learning, making the pedagogy more interesting and challenging. The sharing of the scholarly practice is also meant to be a form of reflection on my teaching and learning as practiced in the technology enhanced learning environments. The research aims to examine how students can be supported and engaged to personalize their learning through the use of virtual learning environment (VLE). The VLEs under examination includes the LMS and other Web 2.0 tools.

The research, PLEaSE examines how new and emerging technologies can be blended into the curriculum at both the undergraduate and post graduate studies. The research started out with experiments in the use of free online tools such as Yahoo! and Google groups for learning. Since year 2007, Moodle was tested and chosen as the Learning Management System (LMS) for the research on PLEaSE. Three cohorts of undergraduate teacher trainees, four cohorts of Masters in Instructional Technology (MIT) students, one group of Diploma in Education, one group of PhD students and one PhD research group have had the experience of PLEaSE. In all the classes, except for the PhD research group, the VLE was used to support their face-to-face meeting.
PLEaSE research is guided by the following questions:

1. What is the best way to use emerging technologies in training teachers and instructional designers?
2. How do students learn in personalized learning environments?
3. What pedagogical change is needed to personalize learning and to engage students with emerging technologies?

CASE STUDY

This section describes four sample cases for the purpose of clarifying PLEaSE methodology. The courses and the learning environments are designed using Merrills’ first principles (2002) of instructional design. The principles guide the instructor to design strategies that engage students through activities and projects that require teamwork, collaborative learning, problem solving, creative thinking and research. LMS is used in all the cases as a platform to inform learners of resources, links, assignments, and as a tool for social networking and collaborating. The activities and the learning are closely monitored by the facilitator and tutors. Formative data is collected throughout the semester for immediate improvement of the processes and to inform and improve subsequent courses.

**Case 1: Undergraduate Program, Bachelor in Education – Technology in Primary Education Course**

The course is required for the Bachelor in Education in Teaching of English as a Second Language (TESL) students. The course was designed to help students learn to use technology for teaching and learning at the primary school level. The students met face-to-face for 3 hours in the period of 14 weeks. 78 students were organized in groups of 3 or 4 per group using the Wiki function on Moodle. Students were required to blog their learning experience on Blogspot weekly. Weblogging for reflection helped the students to examine their understanding of content learnt, their learning process and their interaction with others. Students were able to communicate their ideas and thoughts with other students and received feedback from peers and others, which helped them to further learn the content. Some even created new knowledge to teach others. Students designed their personal web spaces with pictures, photos, videos, drawings, links and music.

The final project was an assignment to design three different learning materials for use with interactive whiteboard. Students worked in their group using Wikis in Moodle. Wikis allowed these students to edit each others’ work and at the same time, they were able to benchmark their project progress and the quality of their work with other groups. Benchmarking helped the students to learn from each other, and in the process developed better products. We find that PLEaSE has empowered the students to manage their personal online space, manage their learning, and also learn to manage others.
**Case 2: Postgraduate Masters in Instructional Technology – Instructional Design and Development Course**

The course under examination was a required postgraduate course for Masters in Instructional Technology (MIT) in UM. The course enabled students to design and develop instructional solutions to problems related to learning. The students were given opportunities to apply the principles of instructional design through an examination of real learning problems.

The students were given opportunities to apply the principles of instructional design through an examination of real learning problems requiring instructional interventions. The students (N = 21) were of varied backgrounds. The cohort had an interesting composition of equal number of people from schools, higher institutions, and the corporate sectors, who were teachers, trainers and instructional designers. The class met for 3 hours once a week for 14 weeks, in multimedia lab and face-to-face modes. A Yahoo group website served as the class group communication tool and a repository for file sharing. Beside the class’ Yahoo group, the students were encouraged to create their own assignment groups using Yahoo and Google services, which are free online facilities. The final assignment was an instructional development project to develop solutions to help lecturers teach and assess soft skill competencies in third year students.

The graduate students worked in groups of 4 to 5 persons in a group. The online assignment groups were used for discussion and submission of individual tasks for the purpose of completing the final assignment. The students were encouraged to personalize their virtual workspaces and share the ongoing online assignment as it progressed using Wikis. Having the online and ongoing assignment available on the virtual space allowed for open viewing by colleagues, permitting the other class members to comment and give suggestions; thus, encouraging students to practice the scholarship of teaching and learning (SoTL).

**Case 3: Postgraduate Diploma in Education – Technology and Innovation in Education Course**

The course under examination was a required course for the Post-graduate Diploma in Education. 95 students with first degrees from Islamic Studies enrolled in the class. The class met for 2 hours for 12 weeks. The class examined the use of Moodle, FaceBook and YouTube. FaceBook was chosen as a tool to engage the group online through the use of E-Portfolio. Each student had to set up an E-Portfolio for the purpose of showcasing their professional development and reflection. The use of FaceBook was modelled by the facilitators, so that the students can learn how to design and develop the learning environment using a social networking tool. Students used applications such as Notes to reflect on their learning journey; Freedrives to store their learning artifacts, videos and photos, all for their personal uses.

YouTube was used as a public platform for students to upload their final project. The digital videos were assessed by viewers other than the tutors. Such tasks encouraged the students to plan for diversity in their audience, and to accept comments and feedback from global audience. The experience with PLEaSE had helped the students who would not otherwise use technology especially the social networking tools. It was also to transform the students from novice technology users to become expert social networkers who would use technology as an innovation in their teaching and learning. Even after the course was over the students are still
actively using the class FaceBook to communicate with each other and to continuously learn together.

**Case 4: PhD Online Supervision**

This case is an examination of how technology can be used to support and monitor the progress of 15 PhD students who are at different stages of their PhD journey. The purpose of setting the online PhD group is to empower the candidates to become independent learners and to engage them in scholarly discourse. Since there is no curriculum to be followed the group manages themselves and develops a community of practice. Moodle is used as a home for the researchers to share their research ideas, their progress and their reflections.

The researchers are able to engage with the content and context of their research through sharing of readings and posting of works in progress, asking for feedback and comments from the peers thus engaging in a social constructivist learning and interaction. The group meets face-to-face once a month with the supervisor. The monthly meeting is for the purpose of preparing and coaching members who are going to present their proposals at the compulsory seminars. At the meeting the supervisor and the other members play the role of the seminar panels and ask questions and give suggestions. Further enhancement or changes are posted online for more feedback from the members. As a result of close supervision, mentoring and peer coaching the researchers have gained confidence to present their research ideas in front of real seminar panels. The group is very PLEaSED and celebrates the success of each presentation.

**DATA COLLECTION**

As evaluation is central to the process of instructional design, data have been collected throughout the duration of the courses to improve the practice of PLEaSE. Qualitative data have been captured through open-ended post-evaluation instrument given to each student to complete at the end of the semester. The post-evaluation instrument has helped students reflect on their learning process. The students have also been asked to reflect on their acquisition of knowledge and 21st century skills through blogs. Learning is reflected through the use of text, essays, poems, songs, graphics and pictures. This enables the lecturer to assess the extent of learning acquired by the students throughout the project.

Diaries kept by each group, the discussion threads in the forums and messages posted on the LMS are also valuable data on the processes that the students had to go through in the process of learning to do instructional design and to learn new technology. The final assignment requires detailed documentation of the process and showcased the products.

Quantitative data were captured by Moodle on the frequency of students’ participation in the online classroom. Learner profiles were collected at the beginning of each semester to help the facilitators know the learners better which aids in the planning of the activities and in the monitoring of their learning. Chat sessions were also used to gauge students’ prior experience. End of semester feedback on their learning experience was collected using questionnaire posted on Moodle.
LESSONS LEARNT

Students learn through experience. By engaging them in the environment where the focus is in personalizing learning while developing solutions to solve specific learning problems through project oriented problem based learning (PoPBL) students are able to actively participate in creating knowledge and manage their learning using technology. Action research with technology allows the learners to engage in an in-depth investigation of a real-world topic worthy of the learner’s attention and effort and at the same time develop life-long learning skills.

Beside achieving the learning outcomes, PLEaSE has shown that emerging technology such as Web 2.0 can be embedded into the course through the use of problems and activities allowing for action and reflection to take place. Technology is an enabler allowing for learning to be supported anytime and anyplace.

PLEaSE allows the teacher to examine his/her pedagogical beliefs and approaches. Embedding technology and empowering learners to become co-designers of their learning takes a lot of letting go of old beliefs and habits. PLEaSE requires the teacher to conduct a thorough instructional design, models the ICT culture and behavior and provides scaffolding that eventually frees the learners to be creative and to take responsibility for their learning. The technology supported PoPBL project approach in PLEaSE allows for the development of meaningful and efficient learning. PLEaSE does not require expensive technology, all that is needed is creativity and an Internet connection.

The experience of PLEaSE-ing students with technology will be shared with lecturers and teachers. Future training programmes will be designed to transform the use of e-learning tools from a place to store resources to a space for personalized learning. Lecturers will be guided to use technology creatively by allowing students to co-design their learning spaces.

The idea of inquiring intellectually into the experiences of teaching with technology for enhanced student engagement will be shared across faculty. The impact of the practices would be assessed cumulatively through systematic observation and longitudinal investigation. It is envisioned that development in SoTL would help foster significant, life-long learning for students while enhancing the practice and profession of teaching.
REFERENCES


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