THE SCHOLARSHIP OF TEACHING AND LEARNING: EMPOWERMENT FOR ENGAGEMENT (EM4EN) INTEGRATING TECHNOLOGY

Raja Maznah Raja Hussain, Ph.D
Foo Sze-Yeng
Department of Curriculum and Instructional Technology
Faculty of Education
University of Malaya

In August 2007, four local universities (UM, UKM, USM and UPM) had been conferred research university status under the Ninth Malaysia Plan in an effort to generate intellectual capital, knowledge and innovative technology (TheStar, 19/8/07). In the endeavor to encourage more research activities in the institutions, research universities should also be equally concerned about enhancing teaching and learning. There is potential in synergizing research-led teaching and learning to encourage a productive nexus between research, teaching and learning. This is envisioned in the scholarship of teaching and learning which entails the publicity of teaching and learning, the susceptibility of teaching and learning to critical review and the accessibility of teaching and learning for evaluation and exchange or use by members of one scholarly community (Hutchings, 1998).

Statement of Problem

The sharing of teaching and learning best practices would be particularly functional in the scenario of reinventing more engaging learning environments for disengaged learners. A UM cross-faculty electronic-mail survey conducted in early 2008 reveals lecturers' frustration with unmotivated learners who resist searching for answers or solving ill-structured problems and who are reluctant to work independently of the lecturer. Lecturers lament that the spoon-feeding mentality is prevalent. This group of disengaged learners' lack initiative to learn beyond what is tested causes immense frustration to enthusiastic lecturers who wreck their brains trying to engage students in the pursuit of their education.

Objectives

The purpose of this study is to share the scholarship of teaching and learning initiative of engaging learners through the use of ICT in higher education teaching and learning environments. This study is a sustained inquiry into student learning across the semester; particularly focusing on evidence of how student learning can flourish through the conditioning of technology-integrated pedagogies. Integration of ICT in teaching and learning is considered to be strongly linked to student engagement and is a legitimate topic for research, development and scholarship (Stefani, 2008). This paper thus attempts to derive a pedagogical model from case studies to help disseminate best practices and develop standards of practice for effective technology integration in higher education.

Research Question

The research question below frames and guides this study.

'What learning takes place in an engaged technology-integrated classroom?'

Conceptual Framework

Circumscribed by the research question, this research studies the relationship between instructional design in technology-integrated classrooms (process) and engaged learning (outcome) taking into account the knowledge and skills of pre-service teachers (input).

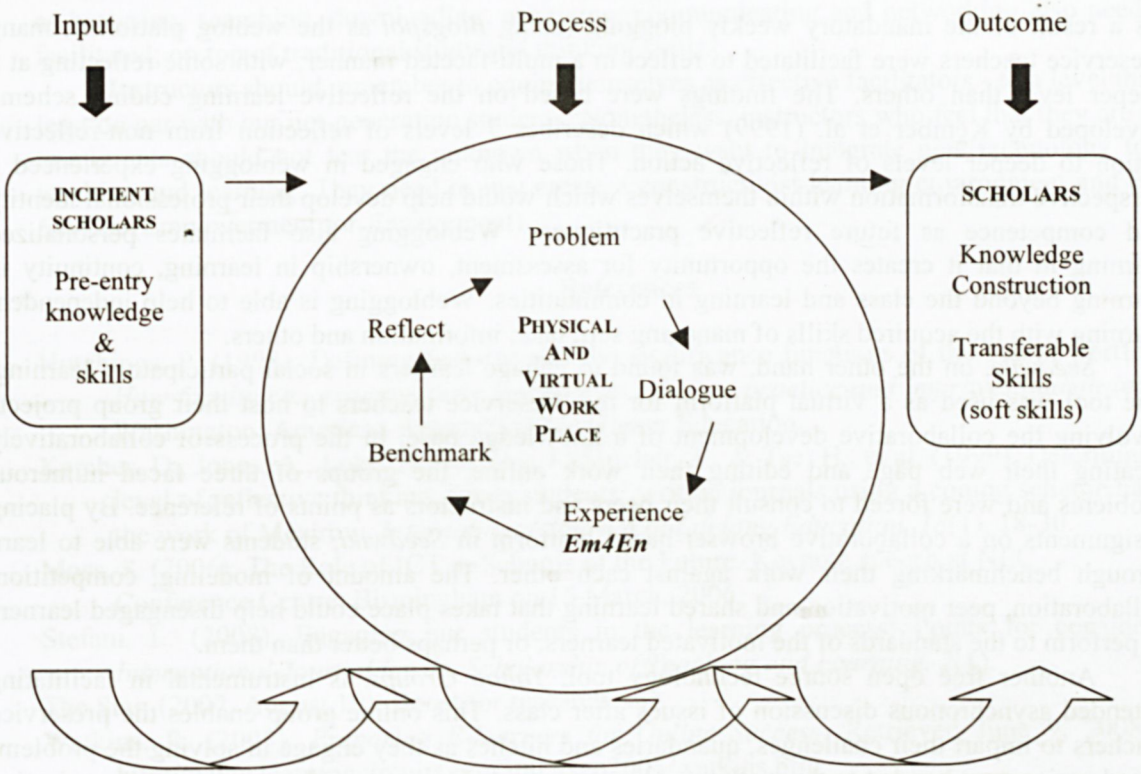

Figure 1. Conceptual framework: On going process of evaluation

Methodology

The research employs both quantitative and qualitative methods to obtain data from multiple points of view and to validate triangulation. In accordance to the ethics statement of the International Society for Scholarship of Teaching and Learning, the research was carried out by independent sources where information is provided to the lecturer after grades are handed in. This elucidated additional protection for the four cohorts of pre-service teachers involved in this study as their grades were dependent on the lecturer.

The four cohorts were all enrolled in the 'Technology in Primary Education' course and introduced to problem-centered project based assignments - where the use of at least one new technology tool is required in a collaborative *physical* and *virtual workplace* (Moss, 2006). They were required to integrate and use selected productivity software such as weblogs, wikis, interactive whiteboard and free online groups throughout the 14-week semester.

This research is preliminary in nature because other than the free online group, the other technology tools were new to either the lecturer or the students. Therefore, it was natural for the study to be exploratory in nature in order to develop in-depth initial understanding of the instructional design and learning experiences. The purposive sampling method was used to obtain meaningful, significant and truthful data that are sufficient to answer the research question set out in this study. Additionally, purposive sampling was decided upon in view of time, and economic constraint against a large accessible population of over 70 students in each cohort.

The methods of data collection for this study include content analysis, which was conducted on weblogs, online groups, group forums, wikis, interview data and open-ended section of the questionnaire. Two questionnaire surveys were administered as a mode of quantitative interpretation to collect ordinal data of students' general attitude towards the *Seedwiki* and their evaluation of their learning experience with *Smart Board.*

Findings

As a result of the mandatory weekly blogging (using *Blogspot* as the weblog platform), many preservice teachers were facilitated to reflect in a multi-faceted manner; with some reflecting at a deeper level than others. The findings were based on the reflective learning coding scheme developed by Kember et al. (1999) which describes 7 levels of reflection from non-reflective action to deeper levels of reflective action. Those who engaged in weblogging experienced a perspective transformation within themselves which would help develop their professional identity and competence as future reflective practitioners. Weblogging also facilitates personalized learning in that it creates the opportunity for assessment, ownership in learning, continuity in learning beyond the class and learning in communities. Weblogging is able to help independent learning with the acquired skills of managing self, task, information and others.

Seedwiki, on the other hand, was found to engage learners in social participatory learning. The tool was used as a virtual platform for the preservice teachers to host their group projects involving the collaborative development of a knowledge base. In the process of collaboratively creating their web page and editing their work online, the groups of three faced numerous problems and were forced to consult their peers and instructors as points of reference. By placing assignments on a collaborative browser-based platform in *Seedwiki*, students were able to learn through benchmarking their work against each other. The amount of modeling, competition, collaboration, peer motivation and shared learning that takes place could help disengaged learners to perform to the standards of the motivated learners; or perhaps better than them.

Another free open source technology tool, *Yahoo Groups,* is instrumental in facilitating extended asynchronous discussion of issues after class. This online group enables the preservice teachers to impart their challenges, quandaries and hitches as they engage in solving the problem-based assignment handed to them. *Yahoo Groups* provided learners with an online communication channel which is open 24 hours a day, thus engaging learners in longer learning hours anytime, anywhere. The online channel also permits more inclusive peer and mentor dialogue, especially in the context of large classes.

Finally the preservice teachers involved in designing English, Mathematics and Science interactive whiteboard (*SMART Board*) courseware for primary schoolers affirmed that they gained procedural knowledge of interactive courseware designing and general ICT skills such as in using LCDs, PowerPoint, Internet, CDs and MS Word. Besides, the preservice teachers enjoyed a rich instructional design experience as they were fully immersed in interactive courseware designing; having to observe learning theories, the adoption and adaptation of materials according to the needs and learning styles of students, usability and learnability factors of the products, writing learning objectives alongside innovative and creative design factors.

Discussion and Conclusion

This paper links the issue of student engagement with the significance of a scholarly approach to teaching and learning integrating technology. We advocate the enforcement of *Em4En (Empowerment for Engagement)* principle for the enculturation of intrinsic learning motivation requisite at university level learning. The learners should be empowered to explore, experiment, evaluate and enjoy their learning experience, which is at the forefront of personalized teaching. Pedagogies that entrust learners with their own learning and integrate novel technologies are able to facilitate more engaged student learning and hopefully more passionate teaching. Thus, learners should be treated as incipient scholars whose initial knowledge and skills are to be taken into consideration and allowed to bloom in the safe physical and virtual learning environment to eventually demonstrate wholesome learning of requisite and soft skills.

This study demonstrated that even technology tools not intentionally designed for educational use can be exploited for instructional purposes. Instructors who are keen in doing the same should lay the foundation for a meaningful and appealing learning package by sound planning and management of instructional design factors. Technologies have dramatically changed the interaction between instructor, peers and course materials; hence, new technology and online tools need to be tailor-fitted to new pedagogies. As an example, new group dynamics, which

consist of the forming, norming, storming and performing stages of group leading in an online environment (Watkins, 2005) ought to be inculcated. New literary skills for online platforms such as browsing, searching, downloading, accessing, communicating and networking also need to be facilitated; on top of traditional study and thinking skills.

Instructors should remember to equip themselves as effective facilitators - to a level that is at least on par with our net-generation students. Nonetheless, instructors who feel that they are digital immigrants should not fear the unknown when they want to integrate new technology tools in teaching and learning. They need to just create a constructivist learning environment and enforce *Em4En* (Empowerment for Engagement).

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