From Content Engagement to Cognitive Engagement: Toward an Immersive Web-Based Learning Model to Develop Self-Questioning and Self-Study Skills

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ABSTRACT

The objective of this paper was to develop an immersive Web-based learning model and measure its effectiveness on improving self-questioning and self-study skills among graduate students. The proposed model was guided theoretically by the flipped classroom as a new Web-based learning trend. It was also guided pedagogically by active and reflective learning principles that support transforming the teaching and learning practices from content engagement to cognitive engagement. The targeted immersive learning model encompasses four reciprocal phases: Pro-act, Act, Reflect, and Re-act (PARR). A control group post-test only experimental design was applied in this paper to examine the effect of this new learning model on both self-questioning and self-study skills. To validate the suggested model, a convenience sample of graduate students studying an advanced statistics course was selected from the Distance Teaching and Training Program at the Arabian Gulf University during the second semester of the 2012/2013 academic year. The dependent variables in this research were measured by self-questioning skills scale and self-study skills scale. After designing and applying this new immersive Web-based learning model (PARR), findings revealed that using the flipped classroom through this immersive Web-based learning model has a statistical and practical impact on developing self-questioning and self-study skills among graduate students. Each student in the experimental group was able to master self-questioning skills needed to apply quantitative research data analysis knowledge and methods. In addition, each student in the experimental group scored more than theoretical average of the self-study skills scale. The results of this paper may increase the probability and generalizability of using flipped classroom to deliver other statistical course at all educational levels. The contribution of this research is that it qualifies the Web-based instructional practices to shift from content acquisition act to knowledge expression and creation act. In addition, the paper will be of benefit to people looking for pedagogical applications of virtual and blended learning environments for developing multiple ways to express what learners know and be able to do.

Keywords: Cognitive Engagement, Flipped Classroom, Immersive Learning Design, Self Questioning Skills, Self Study Skills, Statistical Learning, Web-Based Learning Strategy

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INTRODUCTION

Twenty four/seven, online learning, blended learning, virtual classroom, augmented reality, virtual reality, one-size doesn’t fit all… are all current concepts and themes that shape learning and instructional practices in the new era. Educational practices are facing a paradigm shift. This shift is changing educational practices and applications from being stand-alone activities to multiple ways based activities. This shift is also taking place because of the dominant improvement and innovation of information and communication technology.

Learning is the driving force for the future. Current learning model is facing a paradigm shift in its content, delivery methods, and assessment techniques. This shift is occurring because of the increasing demand on Information and Communication Technology (ICT) and social media network applications. ICT and social media network are the driving educational tools in current age which can be identified as The Third Renaissance Age. Continuous innovations released every year in information and communication technology and social media network represent a double load loop on our current learning and teaching model/s. This shift is pushing researchers to think about an answer to the following question: How can we shift our learning model from being focusing on content engagement to focus on cognitive engagement to prepare the third renaissance learners’ mind?

Third renaissance learners are having collective mind that is diverse, distinct, and dynamic. They need a diverse, distinct, and dynamic learning ecology (Abdelaziz, 2013 A). The previously mentioned abilities are long-term characteristics of learning models. Third renaissance learners are born and educated in more completely different educational context than their past generation had. This environment is highly affected by Web 2.0 applications and social media networks regardless of past or adult generation educational believes and contexts. In such learning ecology, learning is occurring much faster than time. Third renaissance learners are divers in their learning styles and preferences. They need teaching style and curriculum framework and activities that fit with their collective minds and daily habits.

In the meantime, third renaissance learning ecology is dynamic, that is it helps in moving creative ideas and solutions between learners regardless of their nationality or even the time zone they belong to. Dynamic learning is one theme that governs future learners’ interactions. It helps in building mind nods that are adaptive and concurrent. It gives learner what he/she needs of elasticity to direct generating ideas and solutions and share them with others for more meaningful learning.

Future learning models should be diverse, distinct, and dynamic to overcome future learners’ mental and social needs. Diverse, distinct, and dynamic learning ecology help in promote deep rather than surface learning. Future learning models should also support the shift from content engagement (knowledge transfer) to cognitive engagement (knowledge creation and distribution) (Abdelaziz, 2013 B).

Both self-questioning and self-study skills are reflecting the life-long and self-determined learning skills which have been recognized as one of the most important priorities of the 21st century learning paradigm (Serim, 2012; Partnership for 21st Century Skills, 2013). The 21st century learning paradigm needs to rethink how we design new teaching and learning models and strategies that can respond to the learning requirements and reflect the characteristics of knowledge and learning which are basically personal, social, distributed, dynamic, and versatile in nature nowadays (Chatti, Jarke, & Specht, 2010).

In the current paper, the researcher is suggesting a new learning model to be used as a solution to face learning and instructional changes that are taking place because of the increased demand on flipped classroom and Web 2.0 instructional applications. In the fol-
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