

ENGAGING STUDENTS IN ON-LINE LEARNING: Does Gender Matter in Adoption of Learning Material Design?

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ABSTRACT

Education is reforming with the birth of internet. Learning is not solely based on classroom basis but also through on-line. The revolution of internet turn learning not solely based on face-to-face but also through virtual teaching. The expansion of teaching deliveries suggests that we need interactive mechanism to accommodate course material for on-line students. However, creating on-line material required the conception of on-line instructional design. A suitable online material design will permit learners to engage with learning activity. Learners will have opportunity to develop their own understanding. In addition, appropriate learning material will enhance learner's knowledge construction from their short term memory to their long term memory.

The purpose of this paper is to discover the learning material design approach based on gender. The aim of this research is to evaluate teacher's adoption of online material design. The research used Keller's ARCS model. The sample consists of 30 teachers from distance education learning. The findings of this study reveal that gender differed in their adoption of learning material design specifically on getting attention of the student.

The result also shows that relevance and satisfaction also contribute to gender differences in learning material adoption. Limitations of the study and practical implications of these findings were discussed.

Keywords: Online learning, Distance learning, online instructional design, motivation to learn.

INTRODUCTION

Education is reforming with the birth of internet. Tham and Werner (2005) asserted that methods of teaching change dramatically from plain lectures to multimedia presentation. To explain teaching methods due to technology and internet advances, Keller (2008) have identified many concepts such as e-learning, on-line learning, blended learning, technology-assisted learning, hybrid learning, traditional classroom instruction, and mobile learning are being identified. However the concepts are overlapping since it is reflecting teaching delivery systems. In this article the researchers used the concepts interchangeably between on-line learning and e-learning

On-line learning becomes the popular tools for teaching deliveries with the growth of technologies.

In addition revolution of internet has made on-line learning become more visible. According to Akdemir and Koszalka (2008) universities started to offer on-line course in respond to great flexibility that is "anywhere and any time" learning environment. Besides, Alshare, Kwun and Grandon (2006) asserted that from students' perspective on-

line learning provide opportunities for long-life learning that is while working full-time learners benefit accumulation of knowledge and skill without scheduling conflict.

Dahalan, Mokhtar, Lateh, Abdul Ghani, Abu Bakar and Ahmad Azli (2006) noted that on-line learning has been design to integrate instructional material and communicating method. In fact the author further elaborate that on-line learning system such as WebCT, Portal, Blackboard have been developed to help instructors/teachers and learners to have a great access to education and knowledge at any time at any place. Besides, Chen, Lee, and Chen (2005) claim that on-line learning has many benefits including problem solving, enhancing high order thinking skills, and achieving learning effectiveness.

According to Ke and Kui Xie (2009) the key element of distance teaching is interactivity of student's participation in an on-line classroom. On-line learning enables instructors/teacher to develop interaction behavior through instructional on-line material. On the other hand Liaw et al., (2006b) claimed that effective instructional structure help learners to form their own knowledge. Besides in their review, Liaw al., (2006b) noted a suitable instructional structure can raise learners' knowledge construction from their short-term memory to their long-term memory (Atkinson & Shiffrin, 1971). In addition Spiro, Feltovich, Jacobson and Coulson, (1995) noted multimedia instruction enables learners to develop complex cognitive skills. For example; understanding important elements of conceptual complexity, ability to use acquired concepts for reasoning and inferences, and competence to apply conceptual knowledge to novel situations with flexibility. Teacher/instructor should paid more attention in designing an instructional structure since its help student learning.

On-line learning provides learners autonomy environment, self-directed, and opportunity to be self-regulated learners. According Chan Lin (2009) educators should identify instruction components to promote learning. Instruction components increased learning motivation, allowing students to be motivated to engage in learning (Song & Keller, 2001; Wongwiwatthanakit & Popovick, 2000). Moreover, students work independently and a good on-line instructional design will motivate student to engage in on-line learning. In addition, designer should consider that learners usually do not belong only to one style category and that learning in particular can be modifiable either at will or by a change of circumstances (Honey & Mumford, 1992).

Therefore considering the element motivation to learn in instructional structure is necessary to enhance students learning. For designing effective on-line learning environments, Liaw (2004) suggested three considerations: learner characteristics, instructional structure, and interaction. However, Liaw et al., (2006b) asserted that an instructional structure deserves more attention because an effective one will help learners to create their own knowledge. This is due to instructional design for on-line learning must be explicit in the selection, sequencing and creation of learning experiences according (Cantioni et al., 2004).

Therefore, not only analytic and rational know-how are basic requirements in teacher's methodology, but creative abilities and psychological sensitivity become essential skills to design engaging and effective e-course.

To address viewpoint, the purpose of this research is to examine learning material adoption among distance learner teachers at Universiti Sains Malaysia. Specifically this paper tries to understand whether gender differed in designing on-line material. Most of the teachers do not have formal training to design online instructional learning material. Hence, this issue is important as teachers have a significant impact on their students. How the teachers approach in their material design will determine students learning outcomes. On consideration of distance learners are self directed, this research

incorporate motivation elements in learning material design to encourage learner in learning engagement. Therefore, this research used Keller's ARCS model. Besides according to Chan Lin (2009), to support student's self-directed learning in a web-based learning context, researcher should analyze motivational issues related to student devotion to lesson and courses.

LITERATURE REVIEW

Distance Learning

According to Hassan, Hassan, Dahalan, Zakaria, Wan Mohd Noor (2009), nowadays distance learning or distance education is the trend of learning. Advancement of technology and internet has made the distance learning a popular mode among working adults who wish to pursue their study. Ke and Kui Xie (2009) stated that most distance education students are adults between the ages of 25 and more (Moore & Kearsley, 2005). Researcher further explains that these students exhibit differences in academic, psychological, and life involvements from the traditional students (Richardson & King, 1998). In addition Feasley (1983) notice that most of distance education students try to achieve their self-actualization goal. This is due to innate needs, mental models and self regulation impact the individual in learning process (Jennings, 2007).

Moreover Eastmont (1998) suggest that working adults pursue their study because of career development, job security, upward mobility, re-careering, or other professional and personal reasons.

Terrell and Dringus (1999) suggest the characteristics of the distance learners consist of; independent learning style, manifest self-directed behavior, and internal locus of control.

On the other hand Ibrahim and Silong (2002) assert that adult students enrolled in the post graduate program through distance education have distinct characteristics such as positive, persistent, organized, liking for challenge, responsibility for learning and readiness to learn. In addition Dzakiria (2006) noticed that distance learners may also have different in prior learning experience, and use different learning styles and preferences, and coping strategies. As such the author suggests that the teachers/instructor should consider these differences in order to meet the learners' diverse needs, and to improve educational experience, the quality of distance learning material development, course instructions, and the learning process.

Today, distance study is moving toward on-line delivery or a combination of various media (Motteram and Forrester, 2005). Such expansion is due to the advancement of the information and communication technology which utilize internet based learning environment. Web-based learning or on-line learning integrates audio, graphics, animation and text materials have provided for a learning environment that brings education to the students' home and overcome the limitation of physical distance learners (Atan, Abd Rahman & Idrus, 2002).

In correspondence to above statement DeBourgh (2003) also agree that the physical distance must be bridge by artificial communications medium that not only facilitate delivery of information and access to learning resources; but also enables effective and satisfying instructional interaction to occur.

In spite of rapid development in distance education, learning support is important to distance learners. Distance learners students always feel isolation, do not have chance to socialize physically with other classmates, and always feel "they are in dark" (Tham & Werner, 2005). The teachers/instructors must be aware of this feeling when designing learning material. Distance educations teachers need to understand types of pedagogy

involved and, interaction opportunities in distance learning. This is to ensure that online material design can be convey effectively to the students.

On-Line Course Design

Most teachers are creating on-line learning material based on their own understanding toward learning philosophy. However before they start to design many question come across their mind. A question such as; how to make students understands from our learning material specifically for online students; Should we present it just using a plain text, or a combination text and animation; what types of pedagogy to use?, How should we create awareness among students as they look into our learning material? These questions normally are challenges that should be address by on-line course designer.

Research showed that online instructors design a course used theory as to guide the development process (Cicciarelli, 2008). According to the author there are three school of psychology known as Behaviorism, Cognitivism, and Humanism; Behaviorism theories have made use of the environment to influence actions, cognitive based have focus on meaningful ways of learning, and humanistic theories consider students affective needs, concentrated on students' feelings, emotions, values and attitudes.

In designing online learning material, it is also important to realize that most of the distance learners' students are adult. Adult learning theories proposed pedagogy for adults called "Andragogy". According to Knowles (1973) cited in Holton III and Swanson (1998) there are six assumptions on Andragogy Model.

The first assumption is the need to know, that is adult need to know why they need to learn before undertaking it. As a designer of on line material the first task is to help the learners become aware what they "need to know".

Second, the learners' self-concept is being able to responsible to their own decision. The third assumption is experience where adult incorporate experience to their learning.

As such online material design should tap a technique that includes learners experience such as group discussion, simulation exercise and problem solving activities. Readiness to learn is the fourth assumption in adult learning theory.

The fifth assumption is orientation to learn. Adults are motivated to learn when the knowledge is presented in the context of application to real-life situations. Lastly, adult learn best if the most potent motivators are internal pressure

There are many challenges facing by faculty to design a good learning material. One of the challenges is lack of expertise in the design. However considering that online students are adult, at a distance, isolated, and "sometimes in dark", we believe that motivation elements should be incorporated in learning material design. Rovai, Ponton, Wighting, and Baker (2007) cited Moore and Kearsley (2005) stated that motivation is an important variables related to adult distance learner success and often cited in the professional distance education literature.

Song and Keller (2001) notice that in education technology, there are two well-published holistic models of motivational design; a) the time-continuum model of Wlodkowski (1999), and b) Keller's ARCS model (1987a, b, and c). For this research we used Keller's ARCS model approach. According to Keller (1987c), the ARCS model is based upon macro theory of motivation and instructional design which grounded in expectancy-value theory derives from the work of Tolman (1932) and Lewin (1938). According to this theory people are motivated to engage in an activity if it is perceived to be linked to the satisfaction of personal needs (the value aspect), and if there is a positive expectancy for

success (the expectancy aspect). There are four components of the ARCS model to ensure people remain motivate. The first component is attention which is prerequisite of learning; the concern is for directing attention to the appropriate stimuli, followed by relevance which emphasizes motivation by using concrete language and examples that learners are familiar. The third component is confidence with regard to realistic expectations. The last components is satisfaction that is to provide learner to use newly acquired knowledge or skill in a real or stimulated setting, provide feedback and reinforcements to sustain the desired behavior.

METHODOLOGY

The study was conducted at the School of Distance Education, Universiti Sains Malaysia. The sample consists of 66 teachers of various courses from different programs; humanities, social sciences, management and sciences. The respondents were asked to complete the questionnaires regarding their approach to learning material design. The researcher used Keller's ARCS model of motivation (Keller, 1999). The respondent were ask to indicate their agreement and disagreement in the following four areas namely attention, relevance, confidence and satisfaction. Each statement use a five point Likert scale with 1="Strongly disagree" to 5="strongly agree".

The coefficient alpha for the measurement are as stated; attention=0.86, relevance=0.87, confidence=0.80, and satisfaction=0.72 (see table 1).

A total of 66 questionnaires were distributed to the teachers. The overall response rate was 45.5%. 36.7% of respondents were male and 63.3% were female.

RESULTS

The means, standard deviations, reliabilities, and inter-correlations of all study variables are listed in Table: 1. The coefficient correlation showed a moderate relationship between variables.

Table: 1
Descriptive statistics, Cronbach's Coefficients Alpha, and Zero-Order correlations of all study variables

Variables	1	2	3	4
1.Attention	0.86			
2.Relevance	0.77**	0.87		
3.Confidence	0.57**	0.75**	0.80	
4. Satisfaction	0.67**	0.69**	0.65**	0.72
M	4.14	4.05	4.00	4.08
SD	0.48	0.67	0.55	0.64

Note. N=30, **p< .01; Diagonal entries indicate Cronbach's coefficients alpha

Table 2 summarizes the result of t-test to determine whether there were any significant differences between genders in adopting learning material design.

From table 2, it can be seen that only variable attention genders have significant effect at $p < 0.05$, as for relevance and satisfaction the effect was small, that is $p < 0.10$.

Table: 2
Result of Independent Sample t-test between genders in adopting learning material design

Variables	Male (n=11)		Female (n=19)		T value	P value
	M	SD	M	SD		
Attention	3.85	0.51	4.32	0.36	-3.141	0.04*
Relevance	3.76	0.76	4.22	0.56	-1.848	0.07**
Confidence	3.85	0.65	4.09	0.48	-1.122	0.27
Satisfaction	3.82	0.72	4.24	0.55	-1.798	0.08**

Significant levels: *p-value<0.05, ** p-value<0.10

DISCUSSION

The purpose of this study was to learn about teacher's learning material adoption in on-line learning. The teachers' responses provide insight what approach male and female teachers used for their learning material design. The result indicates that male and female teachers are different in their approach toward learning material design.

Female are more focus in their approach to get student attention, used relevance example and provide feedback to sustain satisfaction.

This finding was consistent with Ozdamli, Hursen and Ozcinar (2009) that find gender differences in attitude toward instructional technologies.

In previous research done by Mohd Noor, Hassan, Hassan, Zakaria, and Dahalan (2009) in examining learners' experience of using e-material design in distance education led to student's suggestion such as; to improve learning materials by incorporating examples, learning material that tailored students' previous experience and knowledge, online assessment to enhance their knowledge, and immediate feedback and encouragement from the teachers are also important. This result implies that teachers should aware the motivational aspect in learning material design is important

The interpretation has interesting implication for distance learning faculty. The result suggests those female teachers are more aware of students' motivation to learn. Therefore the faculty should explain to the teachers the importance of incorporating motivation elements in their instructional material. Based on the study faculty should trains teachers in designing instructional material. Teachers should share information pertaining instructional material as to enhance understanding. Consequently students have opportunity to develop their own learning when they enjoying learning activities posses in learning material.

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