The Acceptance of e-Learning System for Gifted Students in Developing Country (Jordan Case Study)

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Abstract: Educational software e-Learning have become very crucial for modern societies. One of the most important used techniques is the web-based learning. Modern societies are divided into two types of students: Regular and gifted students. The later has various distinguished abilities compared with regular ones. In this research, a model to improve e-Learning system for gifted students in developing countries is proposed. The proposed model consists of two factors which are: performance expectancy and effort expectancy. The proposed model also aims to explore the key factors that affect gifted students' acceptance of web-based learning. The proposed model is applied in Jordan where web-based learning concept was introduced in the 90s. The results gained from applying the proposed model in Jordan shows that the proposed model is accepted.

Key words: Gifted students, e-Learning, performance expectancy, effort expectancy, Malaysia

INTRODUCTION

The evaluation of web-based learning environments is a continuing process throughout the development lifecycle (Antonis *et al.*, 2011). Several formative evaluation approaches can use to identify problems areas or to draw inferences about the overall quality of web-based learning environment. However, many of the developmental approaches lack two important considerations needed for implementing web-based learning applications: integration of the user interface design with instructional design and development of the evaluation framework to improve the overall quality of web-based learning environments (Nam and Jackson, 2007).

Educational technology does not concern itself only with technological aspects. It deals with the combination and interrelationship of technology and learning. Web-based learning and programs have increasingly been developed by many academic institutions, organizations and companies worldwide due to their benefits for both learners and educators (Nam and Jackson, 2007).

Many educational institutions today have embarked in the development of web-based learning. However, they face enormous difficulty in achieving successful strategies including the delivery, effectiveness and acceptance of the courses. This is mainly due to the fact that the problem of developing a successful web based course involves multiple inter-related dimensions ranging from technology related issues to pedagogical considerations (Saade, 2003).

Despite significant investments in web-based learning in developed countries over recent decades, concern exists over the extent to which such expenditures have produced the intended benefits. At least part of this concern is based around the issue of whether any web based learning is accepted by the students. Human factors professionals are interested in understanding the determinants of acceptance and ensuring new designs have been built and implemented to minimize resistance. This concern has extended the traditional ergonomic concern with usability or ability to use, to cover acceptance or willingness to use. As soon as potential Web-based learning systems have been identified, instructors would schedule vendor demonstrations, survey instructors currently using the potential systems and if available, request trial instructor access as a basis for evaluating each system's ability to satisfy User requirements and systems specifications (Pergola and Walters, 2011).

Creating a good technology for gifted students afford an opportunity to explore their interest in depth while polishing a variety of technology skills to be a creative productivity, also technology can be used in different ways. Moreover, the web based learning need to

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be primary focus as it's consider technology integration in teaching and learning particularly in developing country (Siegle, 2004; Sternberg, 2010).

Gifted students are children and youth who give evidence of high performance capability in areas such as intellectual, creative, artistic, or leadership capacity or in specific academic fields and who require services or activities not ordinarily provided by the school in order to fully develop such capabilities" (Johnsen, 2004; Montgomery, 2013).

Positive challenges:

- They adopt thinking on an abstract basis
- They are good at problem solving skills
- They are superior in mathematical reasoning ability
- They are easily able to recognize relationships between variables
- They are highly creative
- The students are good at communication skills
- The talented students possess a good intellectual curiosity which is productive and motivated
- They also have a wide range of interests and are independent
- They also possess a erudite sense of humor
- Most of them possess an uncanny imagination
- They also have a keen visual memory and are also good at grasping metaphors and analogies
- They are aggressive with a careless and forgetful especially when assignments are due
- They can be easily frustrated and peeved at anything small and insignificant
- They have learning problems especially in areas of language, spatial conception and memory and sequencing abilities
- They are also poor or completely phonetic-based in spelling
- Most of them have poor handwriting
- They can be disrupted and phase off into daydreams
- They have difficulty with memorization
- They do not perform well on timed tests
- They have poor response to auditory instructions

PROPOSED MODEL OF WEB BASED LEARNING FOR GIFTED STUDENTS

This study, illustrates the factors that affects web-based learning acceptance and these factors are: performance expectancy and effort expectancy on intention to use web-based learning for gifted students. The proposed model is. This model postulates that two direct variables to determine the behavioral intent of technology.

Performance Expectancy (PE): Is the degree to which an individual believes that using the system will help him/her to attain gains in job performance?

The constructs in the other models that pertain to performance expectancy are: perceived usefulness (TAM and combined TAM-TPB), relative advantage (DOI) and outcome expectancy (SCT). This construct within each individual model was the strongest predictor of intention and remained significant at all points of measurement in both voluntary and mandatory settings.

Technology such as web-based learning not only provide differentiation in instructions for gifted students, but also serves as an educational and creative outlet for some of the best and brightest minds in the modern world. Moreover, it is crucial that we have high-ability minds engaged in our most complex technical advancements nowadays. Gifted and talented students should have a developmentally proper understanding of their needs and how their beliefs influence their behaviour and learning (Kahveci, 2010). Pass studies indicated that the attitudes of gifted high school students toward technology usage (Kahveci, 2010), the majority of the gifted participants reported that usage of technology was very relevant to their learning and that they used technology tools such as web-based learning regularly in their everyday lives (Kahveci, 2010; Periathiruvadi and Rinn, 2012).

Gifted and talented students in lower results were more satisfied with using technology for learning than those in higher grades.

- H_1: the Performance Expectancy (PE) has significant effect on behavioural intention

Effort Expectancy (EE): Is the degree of ease associated with the use of system. The constructs in the other models that capture the same concept are: perceived ease of use (TAM) and complexity (DOI and MPCU). The construct in each individual model was significant in both voluntary and mandatory settings and as expected from the literature it was significant only during the post training measurement (Venkatesh *et al.*, 2003).

An effective learning environment for talented students should be learner cantered, encourage independence and innovation, offer various grouping options and be flexible. Studies on the effectiveness of web-based learning have reported several benefits for gifted learners and positive perceptions about learning online. More interaction with technology as a web-based learning was performed by younger gifted and talented students indicated strong interest in the subject area of
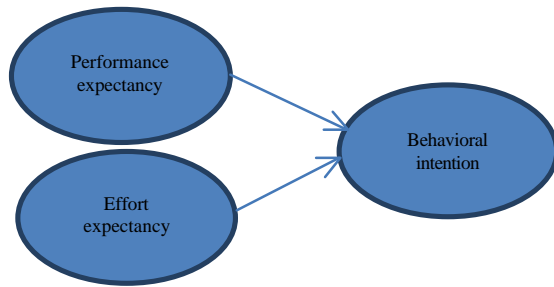
Fig. 1: Research framwork

the online course and considered the online course less difficult than older gifted students have done (Periathiruvadi and Rinn, 2012).

Some studies have mentioned that the gifted students enjoyed learning online and felt the skills they learned will be beneficial for their upper level studies. On their study on identifying the suitable pedagogy for online learning for high-skill students (Ng and Nicholas, 2010) outlined an important features that they observed during their study. Creating a virtual thinking community is potential through online courses as they offer time to reflect and critically think. Conversely, they found that online courses would be more useful if students' progress from a structured to exposed learning environments as the task completion rate was 75%, compared to just 25% when students were offered a totally open learning experience (Periathiruvadi and Rinn, 2012).

Based on the literature, the influence of effort expectancy on behavioural intentions is hypothesized to be moderated by gender, age and experience such an effect would be stronger for young women and older workers at early stages of experience (Jong and Wang 2009; Attuquayefio and Addo, 2014) (Fig. 1).

- H_1: the Effort Expectancy (EE) has significant effect on behavioural intention

PATH COEFFICIENTS ASSESSMENT AND HYPOTHESES TESTING

This study, addresses the the major factors that affect gifted students' acceptance of WBL. In this context, this study proposed a set of hypotheses. The hypotheses were tested by using the structural model. Table 1 presents the outcomes of the structural model. In the table, the values of the path coefficient are presented for each path, or relationship, between each of the independent constructs and its dependent construct. To test the path coefficients' significance in the structural model, t-statistics for each of the path coefficients were extracted by bootstrapping in SmartPLS.

Table 1: Path coefficient and testing hypothesis

Variables	Hypothesis	Beta	SE	t-values	Decision
PE->Bi	H_1	0.287	0.048	5.997***	Supported
EE->Bi	H_2	0.093	0.035	2.636***	Supported

t-values are calculated through a boots trapping routine with 523 cases and 5000 samples; *p<0.1; **p<0.05; ***p<0.01 (one-tailed test)

The model for gifted students' acceptance of WBL proposed in this study, is comprised of two factors and these factors are support the intention to use web-based learning for gifted students in developing country as shown in Table 1. Therefore, following PLS SEM and based on the hypotheses on this study, each key theoretical relationship is featured as a model for analysis during the model development and validation.

Moreover, investigates the relationship between the Performance Expectancy (PE) and the behavioural intention constructs. To support the investigation, the above hypotheses were tested as depicted in Table 1. Results from the PLS analysis showed that Performance Expectancy had a significant positive effect (B = 0.287, p<0.01) on behavioural intention. The effect of performance expectancy on behavioural intention is hypothesized to be moderated by age and gender; such an effect would be stronger for men, particularly younger users. Results from the PLS also analysis showed that Effort Expectancy (EE) had a significant positive effect (B = 0.093, p<0.01) on behavioural intention. The influence of effort expectancy on behavioral intentions which is hypothesized to be moderated by age gender and experience; such an effect could be more strong for young women and older users at primary stages of experience.

CONCLUSION

This study, has described the nature of this research as a descriptive study using a quantitative survey method. It also outlined the methodology employed in this study that investigate Performance expectancy and effort expectancy factors that affect gifted students acceptance of web based learning in Jordan. The population and means of the obtained representative sampleswhich was explained along with the data collection method. In addition, to investigate the difficulties that faced by user acceptance of web based learning for gifted students.

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