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## Effects of e-learning on students' motivation

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### Abstract

E-learning has a significant role in instruction of students in higher education, so the objective of this study is investigating the strength of the relationship between e-learning and students' motivation among students participating in the research. This research was conducted in Tehran Alzahra University. Overall, the outcomes of this study have confirmed that e-learning is an element which affects students' motivation.

**Design/ methodology/approach** – A questionnaire was applied to collect data from students of Tehran Alzahra University; and the statistical method of Pearson's correlation coefficient, was used for data analysis.

**Research limitations/implications** – The analysis is executed in an only country therefore, attention must be paid in generalization of the outcomes.

**Practical implications** – The outcomes of this research will be helpful in developing countries for educational thinkers to better comprehend effects of e-learning on students' motivation.

*Keywords:* E-learning, students' motivation, higher education

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### 1. Introduction

The traditional instructional delivery system in universities for a long time has been a classroom with a professor giving speeches to students and the students listening and taking notes. Communication between the professor and students has been identified to be a critical learning component in this delivery platform. Novelties in educational delivery systems like interactive and reflective schools of thought

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(Haverila & Barkhi, 2009 ; Tamrakar & K. Mehta, 2011) have, however, challenged the traditional attitudes to education. Technology suggests many new characteristics that can be applied to make instruction more interesting to learners (Keller & Suzuki, 2004). It is usually supposed that new technologies make modifications in instruction. Many proponents of e-learning consider that everyone should be prepared with basic knowledge of technology, as well as utilize it as a mean for getting educational aims (E-learning, 2013).

As an outcome of this, many universities have used e-learning in a main way. For this reason the necessity for academic and technical knowledge to teach utilizing the Internet has been appeared, and this knowledge is becoming core proficiency for many professors. Some scholars have predicted that the traditional classroom will vanish. E-learning has entered the instruction as well as the corporate world in a main way and it also completes the traditional delivery styles. It has enabled the traditional educational patterns like distance learning (Haverila & Barkhi, 2009 ; Tamrakar & K. Mehta, 2011). Traditionally e-learning in the higher education model, i.e. at university, has been engaged to: (1) rises visibility of university, (2) stretch the educational suggestion, and (3) as learning “virtualization”. Furthermore e-learning is a crucial device that professors can use to enhance students' motivation and education (Mateo, Pérez del Rey, & Hernández, 2010).

E-Learning has become a crucial component of teaching in universities. There are some theories such as reasoned action (TRAs) and planned behavior that have been used as structures for studying the motivational and contextual elements that impact partaking in instruction activities (N. Garavan, Carbery, O'Malley, & O'Donnell. 2010). E-learning has become a common style of providing educational materials in higher education by universities in every part of the world. Because of these changes there is an increasing need for flexible deliverance of education. Distant learning takes an imperative part in this. Even though distant learning had been common long before the introduction of the internet, technological development has enabled ICT to become a more main device for other forms of learning. In education, the web (World-Wide-Web) has usually been used as a source of information or even as a learning device (Mahieu & Wolming, 2013). All these models or methods hold that it is crucial to produce the learner's motivation. For this reason, numerous of the computer-based learning environments constructed present realistic problems.

## **2. Literature Review and Hypotheses**

In recent years e-learning has been the subjects of many researches, Keller & Suzuki (2004) studied on Learner motivation and e-learning design; the results of their empirical studies have approved the validity of their model for the systematic design of motivationally enhanced instruction in E-learning settings with regard to diminishing drop-out rates and other positive motivational results. Tarans' (2005) study about Motivation Techniques in eLearning, suggests 10 techniques (Manding stimuli, Anticipation, Incongruity, Concreteness, Variability, Humor, Inquiry, Participation, Breaks and energizers, Storytelling) for catching and keeping students' attention, which are regarded as the most important elements in obtaining motivation while learning online. Schaer, Roizard, Christmann & Lemaitres' (2006) study deals with using an e-learning course at ENSIC in France. The results of their study demonstrate that this new teaching does not decrease the time of teaching but encourages more active learning, moreover a better understanding of technology for students to proceed with their own ability.

Rovai, Ponton, Wighting, & Baker, (2007) studied on student Motivation in Traditional Classroom and E-Learning Courses, Their study results give evidence that students who are taught by e-learning are more intrinsically motivated than students who go to Traditional Classroom, They found that there were no differences in three extrinsic motivation measures or a motivation. And also, the outcomes showed that graduate students were more intrinsically motivated than undergraduate students in e-learning and traditional education. Liaw, Huang & Chens' (2007) researchs' aim was to examine learners' approach toward e-learning systems they believed that learners' approaches can be classified four different factors

“e-learning as a learner autonomy environment, e-learning as a problem-solving environment, e-learning as a multimedia learning environment, and teachers as assisted tutors in e-learning. Wan, Wang, & Haggerty (2008) in their study believed that having experience with ICT and virtual competence were two important elements that affected e-learning and had a positive influence on its results, They tested their hypotheses on a sample of 383 students partaking in online courses, Their findings approved the effect of virtual capability and exposed a nuanced mechanism by which experiences with ICT influenced e-learning results. Payne et al. (2009) investigated whether an e-learning approach which utilizes constructivist principles can be effectively used to train staffs in a highly specialized skill thought to need expert individuals and extensive prolonged training, Lastly their study displayed that workplace learners can be better assisted by e-learning settings rather than routine training as they let asynchronous learning and private study which are valued by staffs who have other requests on their time and are more relaxed getting tuition privately. Paechter & Maier (2010) studied about Austrian students’ favorite aspects of e-learning courses that enable them for learning and about the time students choose online or face-to-face learning, the result of their study showed that Students chose online learning because of providing an obvious structure of learning material and they chose face-to-face learning for communication goals in which a shared comprehension has to be extracted. Lawa, Lee, Yu (2010) believed that computer programming skills create one of the main proficiencies. Their research showed that improving well programming skills usually needs students to do a lot of training, which cannot stand if they aren’t sufficiently motivated. A research model is adopted relating numerous motivating factors, self-efficacy, and also the influence as a result of e-learning system. Moreover the results indicate that a well assisted e-learning situation increases learning motivation.

Yengina, Karahocab, Karahocab, & Yücelb, (2010), studied about the roles of teachers in e-learning, in their paper a model of teachers’ role in the e-learning system has been discussed, According to the model they provide pathways for teachers to make online courses that involve students into e-learning more successfully. Mateo et al. (2010) believed Technologies and especially information and communication technologies (ICT) are obstacle breaking in the existing social scenario and their use is becoming crucial for any skilled person, and their scope of use is becoming especially widespread in education due to the existence of communication out of the class through e-learning devices. Universities, which have an innovative role in instruction, are utilizing ICT-based approaches to adjust their learning methodology. In their study, they provide a model where students from first-world universities get ready and adjust course contents for use in educational institutions in developing countries. The finding of Evaluation of E-learning program versus traditional lecture instruction shows Lack of computer skills of students affects their abilities to communicate effectively with the instructor and failed to participate in a variety of online communication methods. Students in the study group were pleased with the e-learning program as a teaching method, but they did not want to take another e-learning program except if they had computer and Internet at home (Abdelaziz, Kamel, Karam, & Abdelrahman, 2011). The role of readiness factors in E-learning showed that organizational readiness factors have a very imperative effect on E-Learning results; Also teachers’ motivation and education are the critical factors in E-Learning (Keramati, Afshari-Mofrad, & Kamrani, 2011). Results about use of e-learning to enhance medical students’ understanding showed that most of students were optimistic about the learning experience (O’Neill et al., 2011).

Kim & W. Frick (2011) focused on changes in student Motivation during Online Learning, The results of their study showed that motivation during self-directed e-learning (SDEL) was the best forecaster of positive change in motivation, which forecast learner agreement with SDEL. Crucial success factors for e-learning in developing countries demonstrate the significance of curriculum plan for learning performance. Bhuasiri, Xaymoungkhoun, Zo, Rho, & Ciganek, (2012) believe that essentials for implementing effective e-learning in developing countries are technology awareness, motivation, and changing learners’ behavior. Personalized Learning Course Planner with E-learning indicates that the offered system improved learning efficiency and student contentment. Further investigation of the

participants indicated that suggesting a learning course suitable for students' previous test scores and priorities encouraged students to concentrate on the lesson (Jeong, Choi & Song, 2012).

Yacoba, Zuriyati, Kadirb, & Zurairahc (2012) studied about student awareness towards e-Learning in education their findings indicate that males and female are more aware towards e-learning in education at TATIUC.

Afzal, Ali, Aslam Khan, & Hamids' (2010) study shows that extrinsic motivation and intrinsic motivation have positive impacts on academic performance of students and academics performance reinforces due to extrinsic motivation and intrinsic motivation.

Isa Figueira & Manuel Duarte's (2011) study shows that, students with a deep approach to learning (i.e. intrinsic motivation and deep learning strategies) like to have a higher quality of learning, outcomes of their study demonstrate that the quality of the learning product enhanced with the interference on motivation.

### *2.1. E-learning*

There are many definitions for e-learning from Educational dictionary: "E-Learning identifies various types of computer-aided learning, usually using modern technological means; CD-ROM. E-learning is expanding especially in the sphere of distance education and corporate training" (Prucha, 2003),

Or a later definition:

"E-learning can be understood as an educational process, using information and communication technologies to create training, to distribute learning content, communication between students and teachers and for management of studies" (Wagner, 2005).

E-learning challenges the traditional ways of training and learning, and provides new solutions for problems. For instance, the role of teachers is probably changing from importers of knowledge to expeditors of knowledge (Haverila & Barkhi, 2009). And it can be a very good learning practice that can exceed the education you may experience in a crowded classroom. It's self-paced, active learning (Obringer, 2002). And also, E-learning contains different types of educational tools in learning and educating. E-learning has the same meaning with "technology-enhanced learning (TEL), computer-based instruction (CBI), computer-based training (CBT), computer-assisted instruction or computer-aided instruction (CAI), internet-based training (IBT), web-based training (WBT), online education, virtual education, virtual learning environments (VLE) (which are also called learning platforms), m-learning, and digital educational collaboration"(E-learning, 2013).

E-learning can refer to different learning settings, In this paper we use e-learning to allude to almost any learning environment in which electronic media, like computers, are utilized as a piece of an educational delivery system. These can extend from using Email to complement print-based materials spread at a distance to courses that are delivered entirely by means of technology like computers or the World Wide Web.

### *2.2. Motivation to learn*

Promoting motivation to learn is one of the main principles for efficient education (Kim & W. Frick, 2011). Motivation to learn reveals that a student desires to take part in, and learn from, a training activity (Garavan et al., 2010).

Motivation to learn in the context of the theory of planned behavior (TPB) signifies an attitudinal variable. Student motivation is often parted into two types: Intrinsic motivation and extrinsic motivation. Intrinsic motivation: A student is intrinsically motivated when he or she is motivated from within: Intrinsically motivated students strongly involve themselves in learning out of unique thing, interest, or gratification, or in order to attain their own scholarly and personal objectives. Intrinsically motivated students like to use strategies that need more struggle and that let them to process information more

extremely. Extrinsically motivated students are tending to put forth the least amount of struggle necessary to get the most reward (Afzal et al., 2010).

In this paper intrinsic motivation is measured.

### 2.3. Hypotheses

The paper provided the main hypothesis: “there is a relationship between e-learning and students' motivation.”

## 3. Objective and methodology of the research

### 3.1. Objective of the research

The research subject is to determine whether use of e-learning in higher education, leads to affect students' motivation in the field of learning and the effect of technology on students' motivation. The purpose of this study is to describe the research carried out and the outcomes which are focused on the motivation of students participating in the research.

### 3.2. Statistical Population and Sampling

The statistical population in this study includes all students of Tehran Alzahra University that were from different majors and different levels of education. The sample volume has been calculated using GPower3.1 as 140 people. In order to select the members of sample, the random sampling method has been used.

### 3.3. Analyses and Results

In the present study in order to test the hypotheses an expert-designed questionnaire was used for e-learning and intrinsic motivation that included 18 questions, which was according to 5-point scales of a Likert Scale (from 1=strongly disagree to 5=strongly agree). In this study the reliability of questionnaire was examined through Cronbach's alpha (e-learning questionnaire 0.63 and intrinsic motivation 0.74), that is presented in Tables 1 & 2.

And the validity was approved by experts view then a pilot study was conducted to improve the reliability of the instrument. Collected data was analyzed using inferential statistics (Pearson correlation coefficient to calculate the correlation size between two variables) through a statistical analysis program, SPSS 20.

Finding showed that results are consistent with the hypotheses. The results of the research showed, that there is a significant relationship between e-learning and students' motivation. Findings indicated that when teachers apply e-learning, more motivation is generated by students and vice versa.

Considering the collected data, the correlation matrix between variables has been computed. The computed coefficient in the matrix is presented in table 3.

Moreover, the results showed that there is not a significant difference in relationship between e-learning and students' motivation in different ages and different levels of education that is presented in table 4.

Table 1: Reliability Statistics (e-learning)

Cronbach's Alpha	N of Items
.639	11

Table 2: Reliability Statistics (motivation)

Cronbach's Alpha	N of Items
.744	7

Table 3: Correlation matrix between E-learning and motivation

		E-learning	Motivation
E-learning	Pearson Correlation	1	.564**
	Sig.(2-tailed)	.000	.000
	N	140	140
Motivation	Pearson Correlation	.564**	1
	Sig.(2-tailed)	.000	.000
	N	140	140

\*\*Correlation is significant at the 0.01 level (2-tailed).

Table 4: Group Statistics

	level of education	N	Mean	Std. Deviation	Std. Error Mean
E Learning	B.A	82	26.2561	5.01556	.55388
	M.A - PHD	50	27.1600	6.13242	.86725
Motivation	B.A	82	2.2718	.53198	.05875
	M.A - PHD	50	2.2914	.55588	.07861

The appropriate statistical model to show the relationship between e-learning and students' motivation could be shown in figure 1.

Figure 1

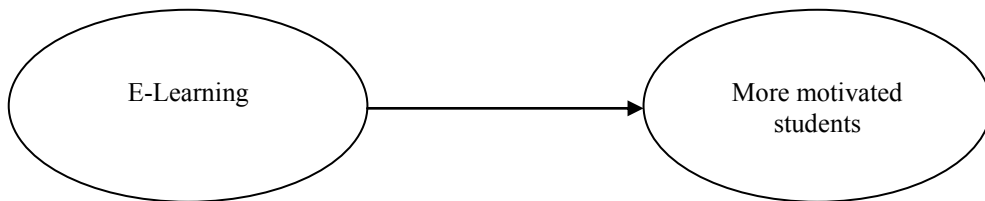


Figure 1 shows general strength of relationship between eLearning as the predictor and students motivation as the criterion. It shows significantly high relationship between two concepts.

#### 4. Conclusion

This study highlighted the significant relationship between e-learning and students' motivation so, students are more likely to be more motivated when applying e-learning. If students are more motivated to learn, then they are more likely to be engaged; and if they are engaged and engaged successfully, they are more likely to achieve the learning objectives (Kim & W. Frick, 2011). So, it would definitely be fascinating to utilize e-learning as a standard device in the instruction of university students.

Applying e-learning as a tool in education needs some attention, Sokolová (2011) states that the following points should be cautiously regarded before utilizing the e-learning in teaching:

- “Content of course - the appropriateness of learning by using e-learning and educational effectiveness;
- Assumptions of educational institutions - ICT facilities, personnel ensure;
- Assumptions of students - the ICT literacy, access to ICT;
- Finally the economic aspect”. (P.178)

However, the analysis is carried out in an only country; thus, attention should be paid in generalization of the results. and since the motivation of students is an important issue in higher education, mainly owing to significance of academic performance in their professional life (Afzal et al., 2010), this study will be helpful for educational thinkers in developing countries to better comprehend the effects of e-learning on students' motivation.

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