

A Model for Predicting Intention to Use E-learning based on Epistemological Beliefs

Mohammad Hassan Seif, Mohammad Reza Sarmadi, Isa Ebrahimzadeh, Hossein Zare

Payame Noor University, PO BOX 19395-3697, Tehran, IRAN. hassanseif2012@gmail.com

Abstracts: This paper investigates the impact of epistemological beliefs on intention to use e-learning emphasizing on the mediator role of motivational beliefs, goal orientation, self-efficacy, ease of use, attitude and perceived usefulness. A sample of 562 students from universities providing virtual education selected for further analysis. Data analysis using path analysis confirmed all of the hypotheses investigated at this paper.

[Mohammad Hassan Seif, Mohammad Reza Sarmadi, Isa Ebrahimzadeh, Hossein Zare. **A Model for Predicting Intention to Use E-learning based on Epistemological Beliefs.** Life Sci J 2012;9(2):926-929] (ISSN: 1097-8135). <http://www.lifesciencesite.com>. 137

Keywords: epistemological beliefs, self-efficacy, Goal Orientation, motivational beliefs, ease of use, usefulness

Introduction:

Development and e-learning providers in different countries need to understand how these are elements of e-learning learners understand and react to it, and how this strategy will promote learning (Koohang and Durant, 2003) plus interest of learners and to identify factors influencing their opinions and beliefs about e-learning in education is to help managers and practitioners in their own mechanisms to ultimately attract more students with the learning environment (Grandon et al, 2005)

The overall objective of this study is to investigate the impact of epistemological beliefs on intention to use e-learning courses and virtual universities in Iran among the students.

Three categories of variables exist in this study, the predictor, the criterion variable and the mediating variables. Criterion variable in this study is the behavior of e-learning usage. Predictor variables include epistemological beliefs; intermediate variables included six variables, computer self-efficacy and perceived ease of use and perceived usefulness, attitude, self-regulatory learning and learning goal orientation.

Research Hypotheses:

Hypothesis 1: epistemological beliefs have a positive direct effect on goal orientation, motivational beliefs and self efficacy.

Hypothesis 2: Goal Orientation has a positive direct impact on motivational beliefs, self-efficacy, perceived ease of use, perceived usefulness and attitude towards e-learning.

Hypothesis 3: motivational beliefs have the most direct is positive impact on perceived ease, sense of usefulness and intention to use e-learning

Hypothesis 4: The self-efficacy has a direct positive impact on, perceived usefulness, attitude and intention to use e-learning and perceived usefulness.

Hypothesis 5: Perception of ease of use has a direct positive effect on, perceived usefulness, attitude and intention to use e-learning.

Hypothesis 6: perceived usefulness has a direct positive impact on attitude toward e-learning and intention to use e-learning

Hypothesis 7: Attitudes has a direct effect positive to the intended use of e-learning

Hypothesis 8: epistemological beliefs has an indirect positive impact on intention to use e-learning through the mediator role of goal orientation, motivational beliefs, self-efficacy beliefs, ease of use, perceived usefulness and attitude

Hypothesis 9: Goal orientation has an indirect positive impact on intention to use e-learning through the mediator role of motivational beliefs, self-efficacy beliefs, ease of use, perceived usefulness and attitude

Hypothesis 10: motivational beliefs have an indirect positive impact on intention to use e-learning through the mediator role of ease11: self-efficacy beliefs has an indirect positive impact on intention to use e-learning through the mediator role of ease of use, perceived usefulness and attitude.

Hypothesis 12: perceived usefulness and perceived ease through the mediation of attitude have the positive indirect effect on intention to use e-learning

Hypothesis 13: Perceived usefulness of e-learning using mediated role of attitude has indirect effect on intention to use e-learning.

In this paper the results of six first hypotheses are presented.

Literature Review:

Rozell and Gardner (2000) to investigate the cognitive, motivational processes associated with the performance of computer-driven model is path analysis, this purpose, 600 students in undergraduate management information systems were selected, and the results indicate that computer self-efficacy has a

direct and significant effect on student academic performance.

In the study of Neber and Schommer – Aikins (2002) the role of cognitive variables, motivational, epistemological, and the environment is emphasized. Number of samples of 133 elementary and secondary school students are. Variables include research in science and knowledge, beliefs, motivation, goal orientation, epistemological beliefs and intentions, it could be included. Path analysis showed that in science research on goal orientation, epistemological beliefs and self-regulation of the strategy is effective, while epistemological beliefs may influence the efficacy.

In the Liaw's (2001) paper, perceived usefulness of the web has a significant impact on the intended use of the Web. Perceived enjoyment of the Web on the Web and to use the perceived usefulness of the web has a significant effect.

Jung (2003) in his doctoral thesis entitled "Evaluation of facilitating learning in adults with information technology and university education» has stated that the teaching - learning facilitated by information technology, the unique issues that are different from typical lesson creates. These issues indicate that further evaluation is needed of factors affecting learning.

Figure 4-1 shows the * $P < 0.05$ ** $P < 0.01$ fitted path analysis model to use e-learning

In the Sen's (2005) research, at four different times during the fall semester 2004 data collected through questionnaires. Results and significant positive effect on computer self-efficacy on perceived usefulness and perceived ease of use was apparent in every four times.

Ravindran et al (2005) predicted the involvement of teachers with cognitive variables and epistemological beliefs and goal orientation. The results showed that the positive relationship between epistemological beliefs and goal orientation exists and these two variables are significant predictors of teachers' cognitive engagement.

Research Methodology

The study of factors affecting intention to use e-learning using a causal model in the virtual university students will explore.

Based on the nature and method of this research can be placed in groups descriptive correlation research. In this study the relationship between predictor variables of epistemological beliefs, computer playfulness and intermediate variables of self-efficacy, learning goal orientation, self-regulatory beliefs, perceived usefulness and perceived ease of use together with the criterion

variable of intention to use e-learning will be investigated.

Statistical population and Research Progress:

In this research, students of virtual universities who are familiar with e-learning selected as population of the study. From the operator universities of e-learning in Iran, the University of Tehran, Iran University of Science and Technology, Mashhad University and Shiraz University cooperated with the researchers. The present study used random stratified sampling and 562 questionnaires distributed and 477 questionnaires returned for further statistical analysis.

Results

Hypothesis 1: epistemological beliefs have a positive direct effect on goal orientation, motivational beliefs and self efficacy.

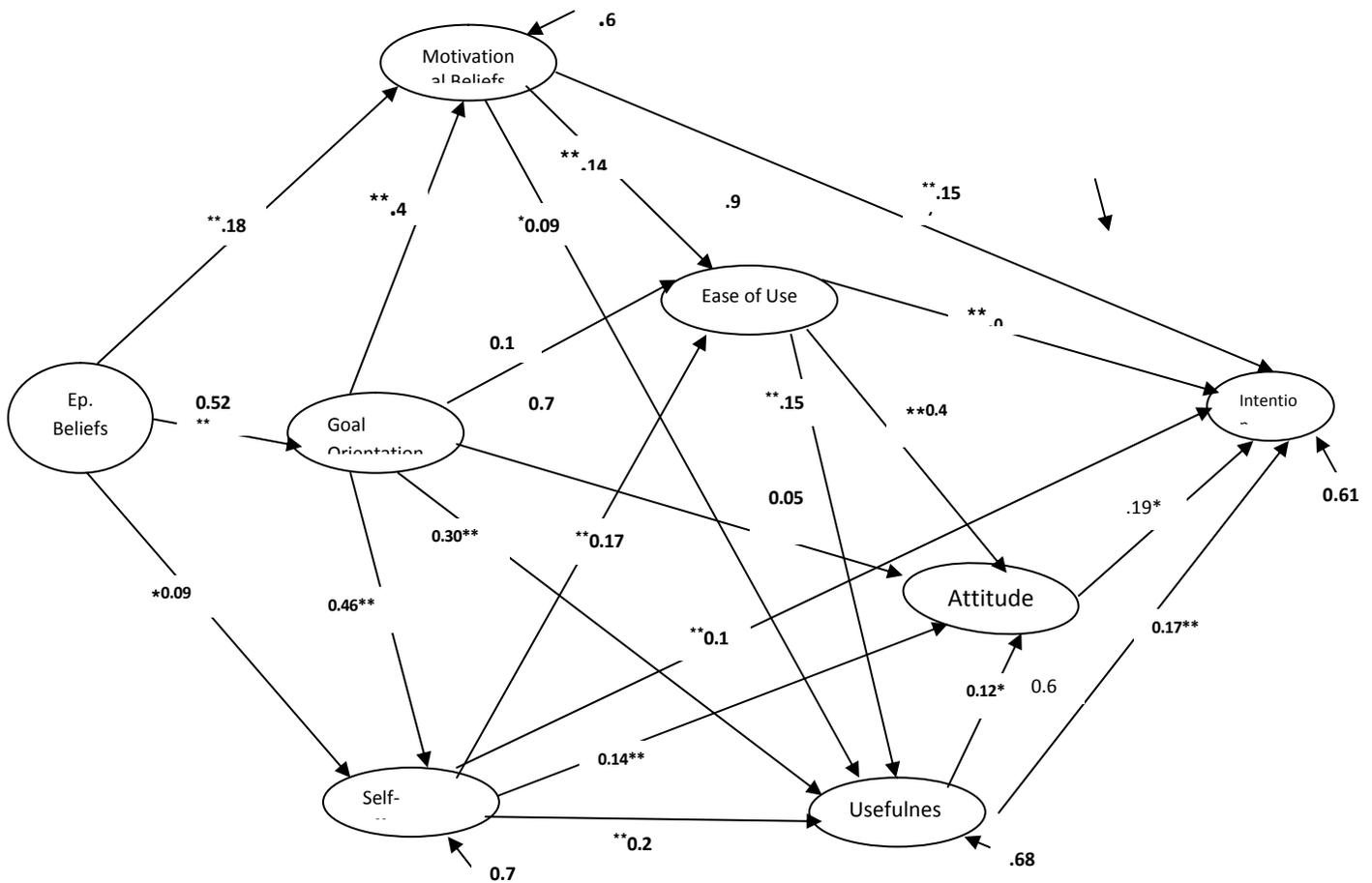
Based on the results the direct effect of epistemological beliefs on goal orientation (0.52) considering ($t=22.13$) at level 0.01 is significant. Direct effects of epistemological beliefs on motivational beliefs (0.18) considering ($t=4.03$) at level 0.01 is significant. Direct effects of epistemological beliefs on self-efficacy (.09) and considering ($t=2.03$) at level 0.05 is significant. The first hypothesis is confirmed in this study.

Hypothesis 2: Goal Orientation has a positive direct impact on motivational beliefs, self-efficacy, perceived ease of use, perceived usefulness and attitude towards e-learning.

According to the results direct effect of orientation on motivational beliefs (0.45) considering ($t=10.18$) at level 0.01 is significant. Direct effects of goal orientation on self-efficacy (0.46) considering ($t=9.93$) at level 0.01 is significant. Direct effect of orientation on the understanding of ease (0.10) considering ($t=1.74$) is significant. Direct effect of orientation on the understanding of the usefulness (0.30) considering ($t=6.05$) at level 0.01 is significant. Finally, direct effect of attitude toward e-learning on goal orientation (0.05) and considering ($t=1.01$) is significant.

Hypothesis 3: motivational beliefs have the most direct is positive impact on perceived ease, sense of usefulness and intention to use e-learning based on the results, the direct effect motivational beliefs on perceived ease (0.14) considering ($t=2.62$) at level 0.01 is significant. Direct effect of the motivational beliefs on perception of the usefulness (0.09) considering ($t=1.99$) at level 0.05 is significant. Motivational beliefs' direct effects on intention to use e-learning (0.15) considering ($t=3.96$) at level 0.01 is significant. The third hypothesis is confirmed by the study.

* Figure 4-1 the fitted path analysis model to use e-learning



Hypothesis 4: The self-efficacy has a direct positive impact on, perceived usefulness, attitude and intention to use e-learning and perceived usefulness. Direct effect of self-efficacy on perceived ease (0.17) considering (t=3.40) at level 0.01 is significant. Direct effect of self-efficacy on the perception of the usefulness (0.22) considering (t=4.86) at level 0.01 is significant. Direct effect of self-efficacy on attitude toward e-learning (0.14) considering (t=3.02) at level 0.01 is significant. Finally, the direct effect of self-efficacy on intention to use e-learning (0.18) considering (t=4.36) at level 0.01 is significant, so the fourth hypothesis is confirmed in this study.

Hypothesis 5: Perception of ease of use has a direct positive effect on, perceived usefulness, attitude and intention to use e-learning.

Results showed direct effect of perceived ease of use on perceived usefulness (0.15) considering (t=3.74) at level 0.01 is significant. Direct effect of ease of use on attitude toward using e-learning (.44

and considering (t=10.86) at level 0.01 is significant. Direct effect on perceived ease of use on intention to use to e-learning (0.22) considering (t=4.19) at level 0.01 is significant. The fifth research hypothesis is also confirmed.

Hypothesis 6: perceived usefulness has a direct positive impact on attitude toward e-learning and intention to use e-learning

Results showed that the direct effect of perceived usefulness on attitude toward e-learning (0.12) considering (t=2.57) at level 0.05 is significant. The direct effect of perceived usefulness on intention to use e-learning (0.17) and considering (t=4.11) at level 0.01 is significant. The sixth research hypothesis is confirmed.

Conclusions:

Findings of the study are a confirmation of models of technology acceptance, theory of planned behavior and theory of reasoned action in different

approaches. As we can see the model presented above may be a brief introduction to the above mentioned theories. In the study 13 hypotheses proposed but the current paper discussed on the 6 hypotheses. However the results of the study confirmed the direct effect of epistemological beliefs on goal orientation, self-efficacy beliefs and attitude toward e-learning. This shows that the construct “epistemological beliefs” is predictor of the three mentioned and theories of planned behavior, Technology acceptance model, and reasoned action theory typically lack such ideologically constructs. It should be noted that although some developments has been occurred on the above models but, there is a need also to consider variables of ideological beliefs while investigating the above models. Researchers of the study suggest studies that focus philosophically and ideologically on the 3 above mentioned models so, the investigation of “philosophy of use” as a predictor variable in future studies is recommended. Also the finding of the study suggests that when designing the e-learning environment it is a good idea to focus on epistemological beliefs. The authors suggest that the most effective way is that the designers and users have a “shared perception of value” in the design, and in this regard it is vital to notice to the ideological beliefs such as epistemological beliefs and philosophy of use.

The other findings of the study are to some extent the confirmation of the predictor role of the variables included in the study in predicting intention to use. Although the predictor role of some variables hasn't been confirmed in some studies but, the researchers discuss that these differences may be due to demographic differences and sample conditions of the other studies.

This study has been conducted in an Eastern culture, so the researchers advise more consideration when using in other cultures and further studies need to focus on cultural variables. So, this may be the other suggestion of the current study.

Acknowledgement:

This Paper has been extracted from PhD dissertation of the First Author in Payame Noor University.

5/5/2012

References:

1. Grandon, E., Alshare, O., & Kwan, O. (2005). **Factors influencing student intention to adopt online classes: A cross-cultural study.** *Journal of Computing Sciences in Colleges*, 20(4), 46–56.
2. Koochang, A., & Durante, A. (2003). **Learners' perceptions toward the web-based distance learning activities/assignments portion of an undergraduate hybrid instructional model.** *Journal of Information Technology Education*, 2, 105–113.
3. Rozell, E.J and Gardner, W.L.(2000). **Cognitive, Motivation and affective Processes: associated with Computer – related Performance : a path analysis** *Computers in Human behavior* (16).pp.192-222.
4. Neber, Hninz and Schommer – Aikins, M (2002). **Self regulated Science learning with highly gifted students : the role of cognitive, motivational, epistemological and environmental Variables.** *High ability Studies, Vol. 13.No.1.*
5. Liaw, S-S.(2002). **Understanding user perceptions of world-wide web environments.** *Journal of Computer Assisted Learning*,18, 137-148.
6. Sen, Sulakshana (2005). **The effect of technology acceptance on post secondary African- American student's achievement in mathematics: A path analytic Inquiry.** Doctoral Dissertation, College of Education, University of Central Florida, Orlando, Florida.
7. Wong, Y.S(2003). **Assessment of learner satisfaction with synchronous electronic learning systems.** *Information & Management.*
8. Ravindvan, B.Greene, B and Debecker, T(2005). **Predicting Pre service Teachers, Cognitive engagement with goals and epistemological beliefs.** *Journal of Educational research. (98)4. pp:222-232.*