

Model for E-Learning in Higher Education of Agricultural Extension and Education in Iran

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Abstract

The purpose of this research was to design a model for e-learning in higher agricultural extension and education in Iran. A descriptive–correlation survey approach was used in this study. Respondents filled in a web-based closed questions questionnaire. Reliability and validity of instrument were determined by investigating the attitudes of e-learning and extension specialists. The study population consists of graduate students of agricultural extension and education in Iran. A sample of 86 students was selected by using the stratified random sampling method. Based on the results, the main components for e-learning in higher agricultural extension and education in Iran were: (1) Students, (2) faculty members, (3) Educational interactions (4) Supporting Factors and (5) learning management system. Based on factor analysis, five most highly ranked items on requirements for students into e-learning in higher agricultural extension and education were identified as: responsibility, participation and creativity, IT skills, motivation and virtual ability. Most important item on requirements for faculty members was learning management and feedback. By factor analysis, factors of e-learning success in higher agricultural extension and education were reduced to two main factors, named as interactions and supporting factors and contents and educational tools.

Keywords: E-learning, Agricultural Extension and Education, Higher Education

Introduction

Advances in Information and Communication Technology (ICT) are opening up new opportunities for distance learning. The use of ICT in delivery of education has major implications for learners and institutions. It is widely accepted that advances in information technology and new developments in learning science provide opportunities to create well-designed, learner-centered, interactive, affordable, efficient, flexible e-learning environments (Khan, 2005). Higher education institutions in developing countries often have problems keeping up-to-date with advances in international science and technology. E-Learning offers many opportunities for supporting education in higher education in developing countries such as Iran. The term e-learning embraces a variety of electronic delivery media, for example web-based multimedia, interactive television, virtual classrooms, video conferencing, and so forth. E-learning, as a positive reaction by universities to the challenge introduced by IT, is characterized by: (1) separation in time and/or space between the teacher and students, among the students themselves, and between the students and educational resources; (2) interaction between the teacher and students, among the students, and between the students and educational resources by means of one or more media, especially through the

Internet; and (3) a process of teaching and learning not limited to the immediate time and/or place (Oh 2003).

In this paper e-learning is defined as teaching and learning that are delivered, supported, and enhanced through the use of digital technologies and media. We consider it mostly off campus learning through synchronous or asynchronous which may encompass a few face to face meetings, but the default mode occurred by distance.

Every college and university in developed countries is discovering exciting new ways of using information technology to enhance the process of teaching and learning and to extend access to new populations of students. Long sides, many universities in developing countries like Iran are investing significant capital for developing virtual universities or virtual sections in the conventional campus.

E-learning in Iran is still in its infancy stages and there are only a few online programs. The history of e-learning in Iran at present time did not exceed more than 6 years, yet from a realistic point of view we might say that e-based learning in Iran has had a 5 year experience and even younger. E-learning in Iran is delivered by both the private sector and government organizations. There have been risen a plenty of virtual universities or centers like Amirkabir University of Technology, Iran University of Science and Technology, Shiraz virtual University and some Islamic virtual collages and centers like Islamic virtual centers and Faculty of the Science of Hadith.

Several studies have been published exploring student perceptions and expectations regarding e-learning (Wang, 2004). Recent studies by the National Center for Education statistics show a growing demand and acceptance of online learning (Waits & Lewis, 2003). Online access can affect how successful students will be in Web-based classes (Anawati & Craig, 2006). Previous research into online collaboration and education in international environments indicates that maintaining contact and access is essential to educational success or students' affective and cognitive development. This contact involves (a) keeping students involved in online projects and (b) building a kind of online community essential to educational success (Vogel et al., 2001). Students who have been involved in e-learning courses are generally very positive about their experiences. At the University of Wisconsin, 80% of the students who took a blended learning course indicated they thought the experience was worthwhile and that they would recommend a course offered in online format to others (Aycock, Garnham, & Kaleta, 2002).

E-learning has been promoted as being more cost effective, convenient, and increasing opportunities for life-long learning. It has demonstrated several advantages over traditional learning, especially in allowing "learning anytime and anywhere." Students have access to online course materials independent of time and place. It also allows students to reflect on the learning materials and their responses, and permits them to work at their own pace, regardless of race, sex, disability or appearance (Richardson & Swan, 2003; Swan et al., 2000).

As a result, it is seen that learners' perception plays substantial role in improving efficiency of e-learning system. In this context, the main purpose of present study was to design a model for e-learning in higher agricultural extension and education in Iran. Knowing that this type of education system is in its starting stage in Iran, designing a model based on perceptions of students would help decision makers in related fields in better understanding of the systems requirements and potentials.

Methodology

The methodological approach of this study employed an analytical method (correlational study). The study population consists of agricultural extension graduate students in Iran (N=110). Target population have been selected by using stratified randomization method (n=86).

On the basis of review of the literature, a questionnaire was developed to collect the necessary data. The questionnaire covered four areas: 1) demographic characteristics such as age, sex, university, and field of study; 2) extent of computer and internet use which were measured on a five-point Likert scale which ranged from 1(very little) to 5 (very much); 3) main components for e-learning in higher agricultural extension and education in Iran which were measured on a five-point Likert scale which ranged from 1(strongly disagree) to 5 (strongly agree).

Content and face validity of instrument were established by investigating the attitudes of e-learning specialists in Tehran University, Iran. A pilot study was conducted with 25 students in Tehran University. Questionnaire reliability was estimated by calculating Cronbach's Alpha. Reliability for the overall instrument was estimated at 0.86. Students filled in a web-based closed questions questionnaire. Email addresses for this population were obtained from their engaged faculty's websites. The web-based HTML format of the questionnaire was designed. The compiled data were saved at a data bank designed for this purpose. After the initial mailing and two follow-ups (resending a letter and a copy of the questionnaire by email), a total of 84 students responded. Data collected were analyzed using the Statistical Package for the Social Sciences (SPSS13). Appropriate statistical procedures for description (frequencies, percent, means, and standard deviations) and inference were used.

Findings

Approximately 77.5% of agricultural extension and education graduate students who participated in the study, between 24 to 29 years and only 5 % more than 40 year. 46.8% of respondents were male and 53.2% were female. Grade point average of graduate students during their B.S. education was 16.71.

Respondents' level of computer and Internet use

Computer and internet skills affected students' use of electronic information resources. For this research, computer and Internet use were measured using a five-point Likert-type scale, Table1 shows the skills of the respondents use the internet. As shown in Table1, the most important uses are Internet surfing, Word and email. The least are Excel and news groups..

Table 1: Respondents' level of use of computer & internet (n=82)

Computer and internet use	Mean	SD.	C.V.
Internet surfing (on-line)	4.72	0.55	0.12
Word	4.57	0.85	0.19
E-mail	4.20	0.84	2.22
PowerPoint	4.26	0.93	0.21
Data banks	2.62	1.45	0.56
Excel	2.32	1.64	0.71
News groups	2.20	1.35	0.61

Scale1) Very little; 2) little; 3) somewhat; 4) Much; 5) Very much

Based on factor analysis for components of e-learning in higher agricultural extension and education in Iran, we have provided a model. Figure 1 illustrates the results of the factor analysis.

As shown in figure1, the main components for e-learning in higher agricultural extension and education in Iran were: (1) Students, (2) faculty members, (3) Educational interactions (4) Supporting Factors, and (5) learning management system. Five most highly ranked items on requirements for students into e-learning in higher agricultural extension and education were identified as: responsibility, participation and creativity, IT skills, motivation and virtual ability. Most important item on requirements for faculty members was learning management and feedback. By factor analysis, factors of e-learning success in higher agricultural extension and education were reduced to two main factors, named as interactions and supporting factors and contents and educational tools.

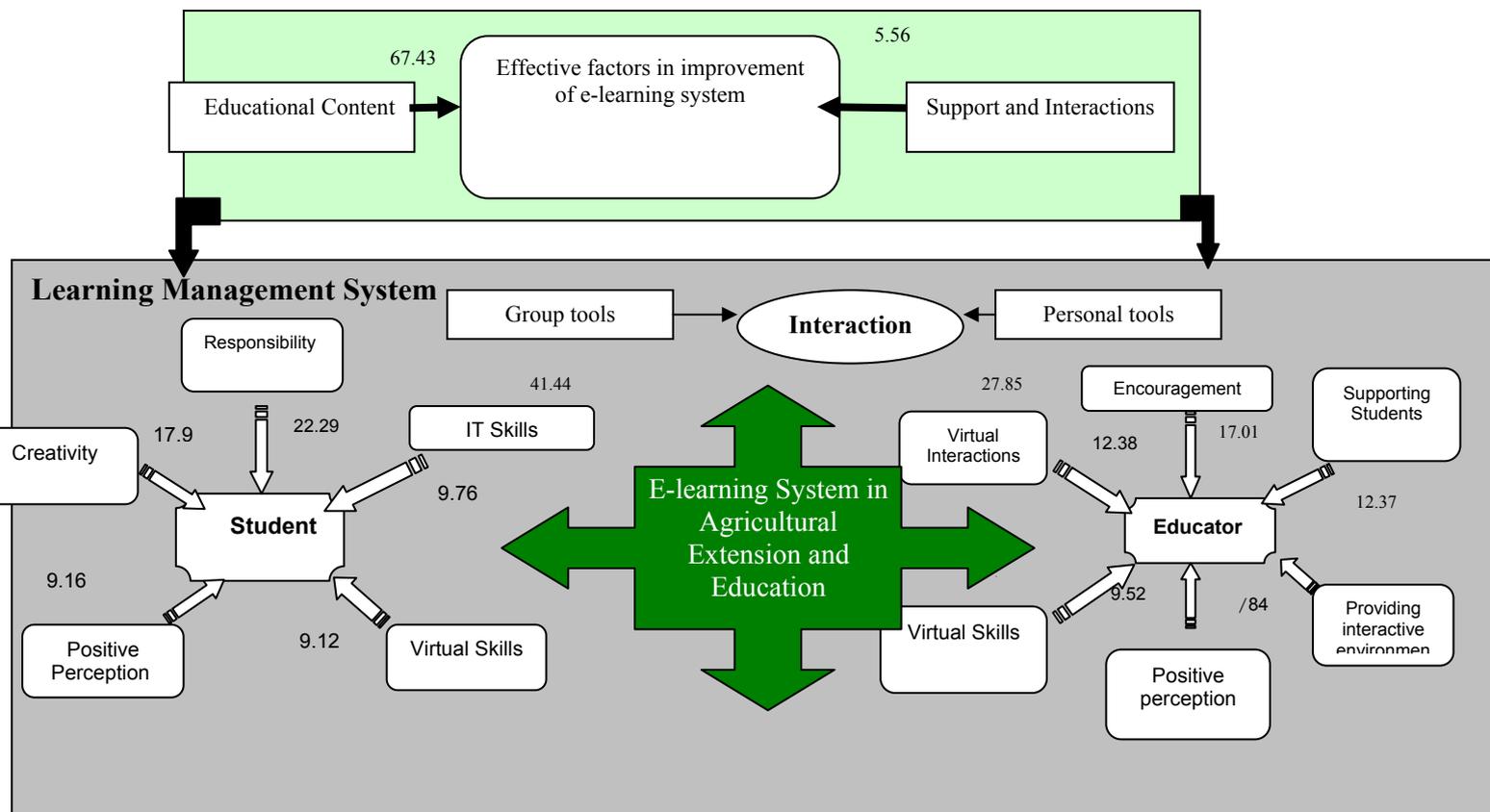


Figure: 3
Model for E-learning in higher agricultural extension and education factor analysis

Conclusions

Deploying advanced higher education institutes and colleges equipped with modern e-learning facilities is one of today's urgent needs in developing countries like Iran. But the sustainability of such learning systems depends on making sound and realistic pedagogical strategies. New learning technologies need to be targeted so that they may develop applied learning skills in the

students. As the writers of this paper have proposed, developing e-learning systems could be considered as a solution for the hazed situation of online higher education in Iran

e-learning represents an important, growing trend in the application of technology to facilitate student learning in Iran. The study presented here focused on designing a model for e-learning in higher agricultural extension and education in Iran Based on the results, the main components for e-learning in higher agricultural extension and education in Iran were: Students, faculty members, Educational interactions, supporting factors and LMS. The findings provide important insight about students' perceptions of e-learning and raise practical considerations for its implementation. This study is thus just an initial effort at providing insightful analyses to the policy makers of developing countries such as Iran's higher agricultural education institutes. Additional studies are recommended to extend the research on both professors' and students' perceptions to their overall attitude, such as willingness to use e-learning, their need for educational technology, as well as technical assistance and training support.

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