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# Information and communication technology (ICT) in higher education: advantages, disadvantages, conveniences and limitations of applying e-learning to agricultural students in Iran

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## Abstract

The use of ICT in education has intensely reformed learning and teaching processes. Furthermore, it has expanded new opportunities for learning and accessing to educational resources beyond those traditionally available. In this condition, the use of ICT in education creates a method of training called E-learning. This paper attempts to investigate advantages, disadvantages, conveniences and limitations of applying ICT in conjunction with E-learning to agricultural students. The paper accentuates the role of ICT on Iranian students in Agricultural Higher Education in particular.

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## 1. Introduction

A quick look at historical development of educational systems through different ages shows that these changes are closely linked to variations in each period. Simple training in agricultural age, classical education in the industrial age and also the transition from classical training to virtual education in the information age or individualism represents both the desired and uninvited changes in education because of the fact that the educational system should reflect the educational needs of society in that period (Miladi & Malekmohammadi, 2010).

In current information society, people have to access knowledge via information and communication technology (ICT) to keep pace with the latest developments. By applying ICT, the possibility of learning without

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constraints of time and place would be achieved which suit the needs of the students. The use of ICT is a symbol of a new era in education. Besides, ICT alters thought patterns, enriches existing educational models and provides new training models. These models shares features of a technology-based training and suggest new learning methods in which the learner plays an active role and also emphasizes self-directed, independent, flexible and interactive learning (Faraj Allahi & Zarif Sanayei, 2009). In this condition, combination of the Internet and computer has created a kind of training called e-learning. In this method, teaching and learning methods move from content-centered to competency-based curricula and they also move away from teacher-centred forms of delivery to student-centred forms (Alestalo & Peltola, 2006; Attaran, 2007). In order to acclimatize the advantages of e-learning possibilities and also condense limitations of this type of training, it is essential to examine thoroughly the features of e-learning for Iranian agricultural students.

## **2. The use of ICT in higher education**

Information and communication technologies consist of hardware, software, network and media for collecting, storing, processing, transmitting and presenting information (voice, data, text and image) as well as related services. ICTs can be divided into two components: Information and Communication Infrastructure (ICI) and Information Technology (IT). The former refers to physical telecommunications system and network (Cellular, voice, mail, radio and television) while the latter refers to hardware and software of information collection, storage, processing and presentation (Sarkar, 2012).

According to UNESCO (2002):

ICT now permeates the education environments and underpins the very success of 21st century education. ICT also adds value to the process of learning and to the organization and management of learning institutions. Technologies are a driving force behind much of the development and innovation in both developed and developing countries.

ICT is considered as a mainstream in higher education. ICTs are being used in many areas such as: developing course materials; delivering content and sharing content; communication between learners, teachers and the outside world; creation and delivery of presentation and lectures; academic research; administrative support and student enrolment (Mandal & Mete, 2012). When applying ICT in higher education, learning is no longer confined within schedules and timetables (Hattangdi & Ghosh, 2008).

In this context, e-learning using ICT facilities are put into existence. E-learning has increased not only the speed of transferring knowledge, but also the method of transferring from one person to another. E-learning is about learning and teaching philosophies and methodologies within the context of outcome-based education, using ICT in the learning environment (Chief Minister Department. Asmal, 2003). E-learning in Iran is still in its infancy and there are only a few online programs. The history of e-learning in Iran at present time has not exceeded more than 13 years. E-Learning is delivered by both the private sector and government organization. There have risen a plenty of virtual universities or centers like University of Tehran, Amirkabir University of Technology, Iran University of Science and Technology, Sharif University of Technology, Shiraz Virtual University and some Islamic virtual colleges and centers like Islamic centers and School of Science of Hadith (Ghasem tabar, 2010).

## **3. Characteristics of E-learning for agricultural students in Iran**

Conventional teaching emphasizes on content, so courses have been developed based on textbooks as a means of teaching for many years, teachers have taught through lectures and presentations and learning activities are designed to combine and rehearse the content. Students have been trained to let others present them the information that makes the curriculum. The use of ICT as an instructional medium is increasing and might likely continue to modify strategies which are employed by both teachers and students in learning process (Oliver, 2003). One of the most important features of e-learning is the students' interaction with learning materials and learning environment. In interactive systems, the learner is involved in interactions which encompass selecting, answering and solving problems. Thereby, the learner is engaged in the process which leads to a deeper and more effective learning process. Learning accompanied with thinking and developing sensitivity to the external environment leads to building confidence and development of learners' characteristics. In general, enhancing and improving the quality of

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