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Research Article

Information Technology from Theory to Practice in Higher Education Structure

[1]Tooraj Sadeghi, Zahra Piroziyan[2]* and Mehrdad Ebrahimpur[3]

[1]PhD in Marketing Management, Department of Managemen,
Neyshabur Branch, Islamic Azad university, Neyshabur, Iran
Tooraj_sadeghi@yahoo.com
[2]PhD student in Educational Administration , Department of
Managemen Neyshabur Branch, Islamic Azad university, Neyshabur, Iran
zahrapiroziyan@gmail.com
[3]PhD student in Educational Administration , Department of
Managemen Neyshabur Branch, Islamic Azad university, Neyshabur, Iran
mehrdader@gmail.com

ABSTRACT

In the past two decades, developments process of higher education dependence on the increased demand for admission to higher education, development of communication technologies, need for human resource development, rapid technological changes, accumulated knowledge and information and leads to serious challenges and changes in the role of universities and higher education in the new millennium. So dramatic changes of higher education and move it towards the universalization and interpretations of the common need for higher education has created new perspectives in the development of higher education that under the influence of the information revolution and paradigm of information technology added new funds to higher education charter. The article discussed after several years of theorizing, turns and focuses on research into fundamental processes and IT operations in higher education are essential. In this study, using theoretical method and library studies gap between theory and deployment procedures were evaluated and the results showed that " there is still the gap between the theory of information technology in higher education structure and deployment procedures in practice between theory and practice]".

Keywords: theory, practice, information technology, higher education

1. INTRODUCTION

Institutions of higher education as an effective pillar of the community has always had a high position in the development of human knowledge and determined the path of human's motion. Higher education system is a very important process in any society. Due to the power of digital technology and spread of information, higher education is on the verge of a revolution. In fact, the production of knowledge in the information age is an activity with the help of technology (Monolescud, Schifterc, Creenwood 1.2004) Insofar as the massive growth of electronic technology and computer networks, is the approach "Information Technology" instead of "information" considered (Terzemy Nejad, 2013). Toffler (1984) with the publication of book entitled "the third wave of IT as a "digital revolution" referred and its application in various fields, especially inevitable education and learning introduced (Isfandyari-Moghaddam, 2012).

Green investigated growth factors of higher education transformation has shown that, access to higher education, funding, economic and social development, responding to the needs of the information age, use of technology and the globalization of higher education change have

an important role. In addition, people, government, students, faculty, staff and university managers increasingly recognize the need to change and searching the development routes and new vision of the concept of higher education (Creen M. 1997) New communication technology has changed the nature of university teaching-learning process. (Attaran M. 2007)

Information and communication technologies not only save ways to promote knowledge and learning methods, but analyst deal with obstacles flexible organizational structure. (Safavi AA. 2008)

In such circumstances, policymakers and experts has created little difference look at the training and now, after several years of theorizing, return and focus on fundamental and practical procedures regarding IT developments in higher education is important and evaluated.

2. Statement of problem

Title may not reflect the views of the scientific community on lack of importance relationship between theory and practices of information technology in higher education used in the real world, as well as the atmosphere of the century, the stress of academic researchers to undertake research practical requirement. Detailed look into the problems of higher education in the development of information technology shown and our universities placed in a limbo of theory to practice and cannot rely on its way towards the development of open source. Given that the knowledge-based development, ICT-based training and its all-round development of basic needs considered and universities should strive to improve its position in this process and recruit the necessary resources.

3. Objectives of the study

Despite the obvious and increasing importance of information technology in this sector still a good investment does not take place compared to traditional education.

On the eve of the third millennium, especially in achieving major developments in knowledge and information is provided. These changes have a profound impact on higher education and the management of its strategy. On the other hand higher education, in turn, on a bilateral engagement in development and IT play important roles.

The basic question is:

What strategies use to higher education in the face of these changing circumstances and ICT growth that fit within the theory of theoretical knowledge and what is need to improvement, happens in practice?

2 Does this research help to identify the strengths and weaknesses?

3. How can research for policy consumers in practice and for those who help organizations challenges face in advancing information technology?

4. Review of Literature

In a study entitled "Investigating the information needs of faculty researcher at the University of Shiraz," that Maki Tafti (1997) has done at the University of Shiraz, the most important thing is to study the application of information technologies to establish a continuous network computer, most faculty members is suggested.

Sotodeh (1998) points out that the use of both number of users and the use of electronic information resources is very low. According to Efat Nejad (2002) entitled "Evaluation of the graduate students of Shiraz University of information technologies" at Shiraz University respondents of information technology to a high rate of in management activities thesis writing and the translation of the article have used and use of information technologies in research activities in the internal seminar, foreign, poorly edited and translated books. Mohammad Rahman Pour, Liaghatdar, Afshar (2014) cultural - social challenges and Iran's higher education human resources in the development dimension of information technology tested and results at the cultural - social dimension showed high ratio of students to computers available, spirit weakness students searching, poor English language in students and teachers, are the major challenges in the human dimension as well as the inability of students and teachers on how to access information in databases was an important challenge.

Farajollahi, Zarif Sanei in ICT learning -based research in higher education they reached to this conclusion and in this teaching method

emphasized student has played an active role in learning and are self-directed, independent, flexible learner. Haji Khaje Lu, Yari and Bazdar Qamchi Gieh inhibition development challenges of ICT in Higher Education (Shahid Beheshti University carried out a case study and results showed the greatest challenge in the development of ICT in higher education in order to learn the culture of weakness and the application of information technology and the lowest cost on the use of technology.

What has taken over part of the research in the field of information technology in higher education in Iran in the field of higher education, but in spite of difficulties and obstacles, and the use of new technologies in the field of higher education will increased.

5. Methodology

In this study, to collect information and library studies, theoretical analysis method was used.

6. Review of Literature

6.1 Information technology

Processing and distributing of data using hardware and computer software and remote equipment (Faizi and Rahmani, 2004).

Theory: the so-called theory has different meanings, perhaps evokes a special meaning for everyone and in order to have any dictionaries are several definitions for the term.

The definition or meaning to us on information management with a set of linked cases. "So in theory, is a linked group of cases as a rule that is used to describe a group of phenomena". Practice: The true value of theory in its application in a real position to correctly describe the situation manifested.

If a proper information system is available, please know what is happening. Managers usually do not know what for him is questionable because of these events.

Theories are searching to explain this question (Beheshtiban and Abul Hasani, 1999).

6.2 Development and progress of ICT in higher education

Webster's dictionary defines technology is how to do it using technology (Manchacam, Resva 2004). Paul Sartre, training technology is process rather than product (Reddy R, Coodman P, 2001) and review the historical development of education in the universities indicated that the integration effect of technology in higher education. The use of information and communication technologies for learning is more than 5,000 years ago. The first revolution was the invention of writing with sharp tools. The second information revolution since the invention of printing (1459 CE) began. The third information revolution only began 50 to 60 years ago with the invention of computers.

The possibility of converting the raw data into structured information, transform information into knowledge and knowledge into action using intelligent software and robots provided.

Bill Gase CEO of Microsoft point out to this. The computer is a powerful tool for education and reach learners in new world of creativity and facilitating communication, rich information and remote collaboration (Coodman P.2001). Higher education is on the verge of a revolution due to the power of digital technology and the spread of information. In fact, the production of knowledge in the information age is an activity with the help of technology. With new technology, develop new strategies and a lot of communication barriers will be lost. IT paradigm to transform education richer models available and suggests new ways of teaching and learning. (Safavi AA, 2008)

6.3. Information Technology (theory and practice) in world higher education

Global development trends have passed industrial age and now the era of post-industrial, information society and globalization of communication and information explosion (Rahmanpour, 2009). To the extent that the massive growth of electronic technology and computer networks, the approach "Information Technology" rather than the information itself considered (Terzmy Nejad, 2013). The initial development of information technology in the research process leads industrialized countries and their university education. In America in the year 2008, approximately 6.4 million students have benefited from training programs based on the Internet that shows a 17% growth over the previous year (Hu and et al, 2012)

In 2003, about 8.7 million jobs in Malaysia also exist on the Internet; in 2006 this figure reached

to top 10 million, ie 13.5 million (Natha and Yeow, 2009). The countries with coverage ratio of 57 percent are considered as one of the top Asian countries (Salman and Hasim, 2011). This, while the coverage ratio in South Korea, 78.6 percent (Lee, 2010) and in Turkey, 47 percent (Turan, 2012) have been reported.

Also analysis and study in England, France, Spain, Germany, Portugal and Norway countries led to the emergence of concepts such as the allocation of funds, related expenditure and investment to further develop ICT also been sent. These factors refer to the concept of investment and as one of the main needs of IT development in countries such as Germany and Finland have been considered and on the other hand academic research in the country as well as depend on the investments in this area. Portugal, Germany and France are recent association study (Akhavan, Bagheri, 2011: 71).

6.4 Information Technology (theory and practice) in Iran Higher Education

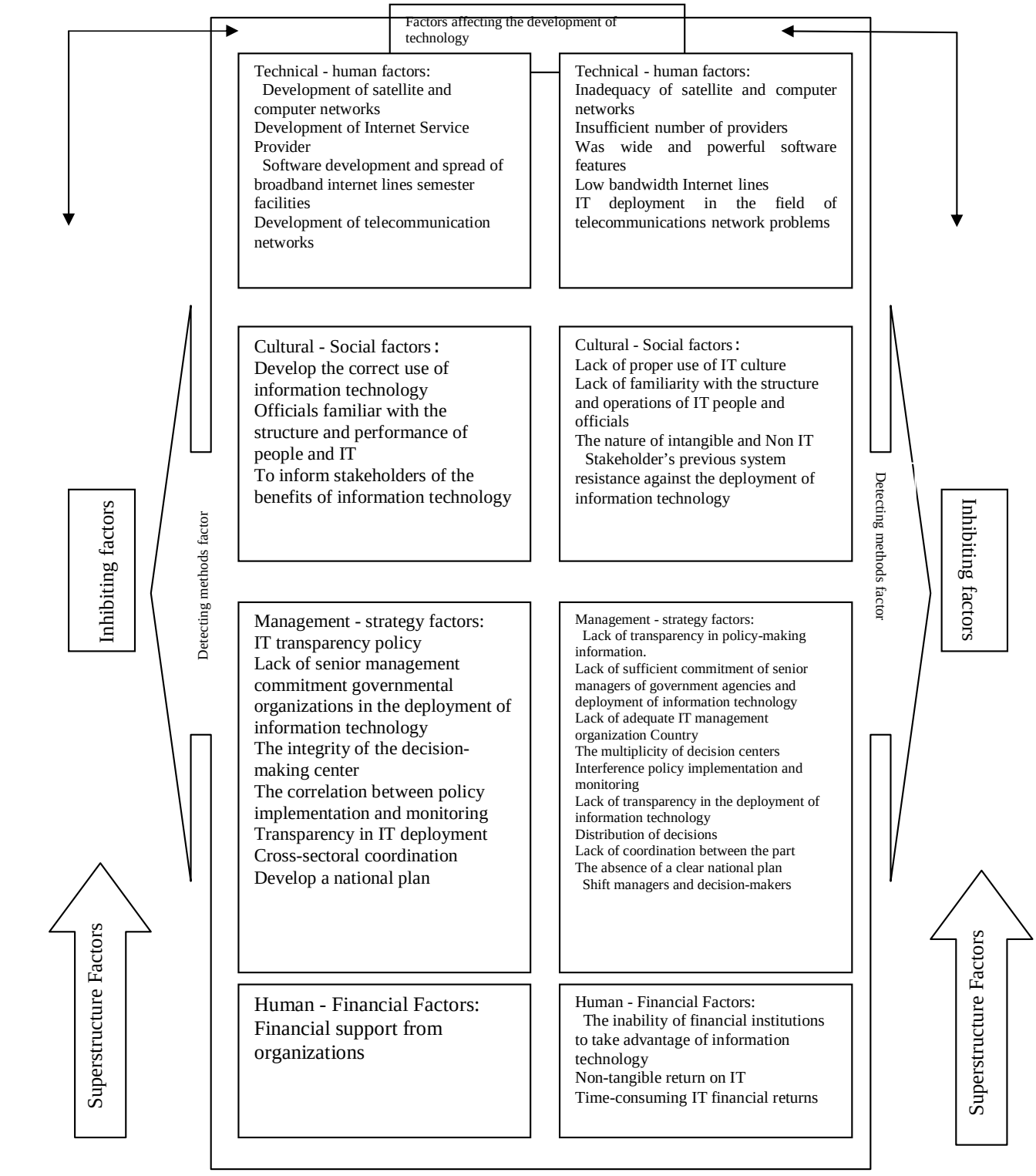
The first official e-learning University in Iran is Shiraz University in 2004 has started. One of the important initiatives in this regard is the operational plan of the scientific network that by the Ministry of Science, Research and Technology and by the Scientific and Industrial Research Organization of Iran was launched. The plan goal was providing the perfect platform for the exchange of information between universities in the country for the Internet and Intranet. This data transfer bandwidth in universities of the country within two megabytes per second is possible (Rahmanpour, 2008). Many Iranian universities in some disciplines utilize e-learning. Among these Amir Kabir University, Sharif University of Technology, Science and Technology, Isfahan and Hadith Sciences Faculty noted (Bahrininegad, 2006). However, despite such efforts, as well as the investments made, the proper use of these technologies in higher education does not come to practice and usage is unknown. In reviewing the country's universities, unfortunately, a documentary on higher education strategy and policy for the use of information technology in education does not exist, however, the survey data suggest developed countries definiteness of purpose, policy and program development of higher education and universities in their military intelligence; the same information in developing countries with less intensity and accuracy is traceable, it is therefore essential that the Ministry of Information Development Program as well as the development plan drawn up for each one of our universities so that the roof of the IT demands of university system and secondly, to achieve its program goals determined.

7 Conceptual model

Accordingly, factors that can play a deterrent role or facilitator and is expressed in the form of a conceptual model, in this model, social and cultural factors, human technical, strategic management, human and financial, as well as factors underlying factors and the size of the organization and superstructure projects play a role in failure or development of information technology in higher education. These factors are providing higher education opportunities for development in the areas of information technology in their task field. In the absence of these factors, higher education institutions are faced with major challenges. In a study based on indicators and indicators provided by UNESCO a number of important universities in the country, including universities: Arak, Alzahra, Mazandaran, PNU, Tarbiat Modarres, Tehran, Isfahan, Amir Kabir, Sharif, Shahid Chamran and Science and Technology in the Service of Information and Communication Technology examined the status of universities is such a picture:

- ✓ Lack of use policy of information technology in higher education
- ✓ Lack of comprehensive plan development of information technology in higher education
- ✓ Lack of identification of adequate funding scheme for development of information technology in higher education
- ✓ Lack of monitoring and evaluation mechanisms for the implementation of the master plan for the development of technology and low bandwidth...
- ✓ Use of information technology in universities in the country is not based on a

detailed program and suffered problems have been fixed in many countries for many years.



Size of the organization: the separation of the smaller projects
Project size: Enterprises with less time, less people involved, and lower cost high

Organization size: large organizations
Project size: long time, many people, high cost

8 Indicators and indicators of development of information technology in higher education (theory and practice)

Development of information technology in higher education systems may be based on indicators and markers assess UNDP development model has developed some of these indicators in Table 1.

Table 1 shows the development of information technology in higher education

No	Marker
1	Policy document use of information technology in education
2	Plan of development of information technology in education
3	Budget allocation plan for the development of information technology in the education system
4	Responsible for the implementation of the Master Plan for development of information technology in education
5	Monitoring and evaluation mechanism to implement the plan of development of information technology in education
6	Number of computers available for every 100 inclusive
7	The number of educational institutions with computers in education
8	The number of educational institutions has a telephone in educational training
9	The number of educational institutions that have used the Internet in education
10	Average broadband Internet access for educational institutions
11	Average broadband Internet access per user
12	The number of educational institutions with e-learning
13	The number of IT-based courses

Based on the criteria listed from the perspective of growth in information technology among the countries five main categories identified:

Group I: Pioneers (Skaters) includes 13% of countries in the world that pioneered the development of ICT as an investment with enormous move in this direction (Montazar, 2007).

Including US, Australia, UK, Germany, Singapore, Japan and Canada noted.

Group II: Extremist: this category with long strides and effective way to move digital society (Jahangard, 2007). Italy, Taiwan, South Korea, Kuwait, France and Spain are among the countries.

Group III: posterity (Champions of Speed) contains 20% of countries, including the United Arabic Emirates, Argentina, Chile, Russia, Malaysia, and Turkey.

Group IV: Soils (step Goals): Most countries in this group are at the beginning of the path to the ICT (Jahangard, 2007).

Among the countries in this group, about 19 percent of the world's countries, including China, Indonesia, Egypt, the Philippines, Iran, Jordan, India and Pakistan.

Group V survivors (Junior): Including Asian and African Iraq, Vietnam, Somalia, Nigeria, Ghana and Angola countries

Refers to some selected countries from each group.

1 America

America has ranked first in the field of development of information technology and communications. It can be said there are about 50 educational systems. Telecommunications lines in the country are limited in good condition and educational institutions have the opportunity to use properly. More than 70 per cent of educational institutions have access to the Internet via a dedicated line (Montazar, 2007).

2 Australia

Australia, with a population of about 21 million people, many activities in the field of e-learning development is done including the national plan EDNA it can be noted by the Ministry of Education. All universities in the country are connected to the Internet and joint projects with universities of America and Japan are running.

3 Chinese

China has about 1.4 billion people and its higher education system dependence on government communication platform in China has speed 8 Gbps in high-capacity points. It is about a thousand universities and the use of ICT policy to meet growing garlic for entry to higher education (Zhao, 2003)

4 Sudanese

Sudan is one of the countries among African countries in terms of IT development situation is comparatively better. The country, in addition to privatization of telecommunications, over a four year program (1994 to 1998) have been installed in two thousand and 500 kilometers of optical

fiber and the establishment of 36 satellite and terrestrial digital conversion of all call centers to achieve success (Osman, 2003).

5 Uzbekistan

The country has 63 universities and research centers, and 800 thousand and 160 thousand student and full-time faculty. There is a huge gap between this country and the developed countries in ICT development and about 40 percent of those who are sent to other countries to learn the technology, do not return to the country. Uzbekistan aims to use information technology in education and e-learning system development, especially rural education has defined qualitative and quantitative development. All universities in the country have a local network and Internet access and 9 Computer Higher Education Center.

In addition, three thousand colleges for electronics and multimedia will be provided all universities (Fyodorva, 2004). Although Iran has been developing ICT in higher education but given the changes and developments elsewhere, as well as indefinite Executive Plan, Iran still remains among the countries considered. The development of information technology in higher education in Iran, according to indications listed in the table (2) compared with other countries is visible.

Table 2 indicators of development of information technology in world selected countries

Country Marker	China	England	Germany	America	Australia	Sudan	Uzbekistan	Iran
Document the use of information technology in education	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Master Plan for development of information technology in education	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Allocating funds for the development of information technology in education	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Responsible for the implementation of the plan of development of information technology in education	Yes	Yes	Yes	Yes	Yes	No	X*	No
Monitoring and evaluation mechanisms in the development of information technology in education	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Number of computers available for every 100 inclusive	x	100	100	100	100	10	30	Tehran 20, city 8
All Computer training institutes in education	x	All	All	x	All	200	All	Formally zero, for training 15 universities
Computer training institutes in education	x	All	All	X	All	200	x	Zero
Educational institutions have a telephone number in education	3درصد	All	All	All	All	200	All	Formally zero, for training 15 universities
Broadband Internet access for educational institutions	100 Kb/s	200 Kb/s	500Kb/s	500Kb/s	200Mb/s	56Mb/s	x	Tehran: Mb / s3 city of Kb / s128
Broadband Internet access for each learner	50 Kb/s	1 Kb/s	2 Kb/s	10 Kb/s	8 Kb/s	1 Kb/s	56 Kb/s	Tehran: b / s500, the city b / s100
The number of virtual education institutions	670	5	x	x	x	No	7	Three Agreements (in the utilities)

The number of IT-based courses	78	17	x	X	X	No	x	Seven courses
Students enrolled in e-learning courses	x	x	x	x	x	No	x	About a thousand people
Number of training courses related to information technology	x	x	x	x	x	No	x	Zero
Individual lessons for different levels of information technology	Yes	Yes	Yes	Yes	Yes	Yes	Yes	20 courses (10 undergraduate and 10 graduate)

9. CONCLUSION

IT trends from theory to practice in the structure of the of higher education in recent years in this paper investigated and it was found during the review of the experts' research and the researchers have concluded that the impact of theory and training in academic circles and procedures that are used in the practice of it. Many of the key changes must occur in the way of teaching in universities, objectivity was exposed, and teaching methods in universities has remained constant. Despite the strange wonders of information technology and aggressive efforts to expand their methodology and our universities are still fundamental structural problems. The results showed that the lack of training programs based on the multimedia lack of a national policy for the use of information technology in universities, culture weakness in the introduction and use of information technology, knowledge and skills makes administrators and users in information technology and students in the use of databases in their research activities on resources not take advantage.

So check the status of the application of information technology in higher education development strategies in all aspects of higher education not include human resource development, policies, content, applications and communications infrastructure is taken into consideration. The possibility of obtaining the information society and information technology university along with rushing wave provided. The main purpose of the guidelines explain the characteristics of information technology to increase the quality of higher education and higher education system to meet the demands of society, the realization of e-learning, restructuring and re-engineering and it's important realize that the main thing pragmatic and rational approach towards and away from the theories and avoiding oriented approach.

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