

Priorities of information technologies in education system in Kazakhstan

Ivilgaziev A.E.¹, Besekey E.²

Kazakh Economics University named after T.Ryskulov, 050035, Zhandossov street, 55, Almaty, Kazakhstan.
e_rki_n@mail.ru

Abstract: The article analyzes the development of higher education in Kazakhstan. The main fields of application of information technology, a systematic approach in the evaluation and management examines the factors affecting the development of the university management, identify indicators that affect the efficiency of the use of information resources, as well as set and methodological aspects of the implementation of new educational standards.

[Ivilgaziev A.E. **Priorities of information technologies in education system in Kazakhstan.** *Life Sci J* 2014;11(9):175-179]. (ISSN:1097-8135). <http://www.lifesciencesite.com>. 24

Keywords: information technology, information systems, higher education, management of the higher education institution, the educational process, educational activity.

1. Introduction

Technological, economic and social transformation of world society at the present stage of development of Kazakhstan require preservation of socio-economic and political level in the future development of a democratic and legal state with innovative economy at further increasing quality professional potential of the population.

Analysis of recent research and publications.

Innovation in education lead to changes in the structure of the content, organization and support of the educational process and require the determination of generalizing factors affecting higher education system. Features of the innovation process at the macro level, lies in the fact that if it is built on the technical and technological or scientific and technological innovation, has an impact on the economic and social spheres of society, since it modifies the value and quality of consumer education services require large infusions into the education system, which changes the set of relations of the consumer. Issues of investment seems to be one of the most important on the level of support the innovation process, as it implements the totality of financial relations between its participants. Significant contribution to the study of theoretical and practical issues of information technology in the management of higher education made by such prominent foreign and domestic scholars as R.A.Alshanov [1], T.Askarov [2], A.Wolf [3], S.D. Bushuyev [4], V.G.Eliferov, V.V.Repin [5], Sh. Armstrong, B. Chapman [6], E.S.Polat [7], V.Sadovic [8], V.D.Shadrikov [9], A.V.Shadrin [10], H. Ahmed [11], W. Scheer [12].

Aim of this study is to implement the qualitative development of Kazakhstani universities contained in the establishment of the main priorities of the application of information technology in higher education in the country: educational process,

research, administrative process, e-commerce. At the present stage the use of information technology in the management of the university is to determine and methodological aspects of higher education, identifying the main factors effective use of information resources.

2. Material and Methods

Widespread scientific methods of analysis and synthesis, processing methods and classification of the empirical knowledge, logical and economic analysis, systems analysis, statistical treatment of the pilot study, formalization as essential construction and study of the national education system have been applied at the stage of research and preparation of this article.

3. Results

The forest herbs species in the oak and pine forests Available scientific basis and application of information technology in the management of the education sector in Kazakhstan are chaotic; there is not a single evidence-based approach to study the problems. Implementation of the Concept of Education Development of the Republic of Kazakhstan till 2015 to enhance the quality of education, promotes the formation of the higher education system, adequately responding to the rapidly changing global processes under the influence of innovation, including information technology, allowing to improve the mechanism for managing higher education institutions (HEIs) in the present conditions.

Facing higher education in the world community, and in Kazakhstan, as the most promising and rapidly growing area of the economy, were set strategic objectives. Experts estimate that worldwide volumes of supply and demand of educational services at significant growth,

particularly in higher education, the most rapidly developing countries, and the rate of annual increase are 10-15 %.

The rapid growth of scientific, technical, cultural and intellectual potential of society is directly related to the level and condition of the higher education system, augmenting the educational and professional level of the entire population. Technological, economic and social transformation of world society at the present stage of development, universities have turned into a strategic factor of progress. And the status of modern Kazakh universities further determined by the tasks of building a democratic and legal state with innovative economy, overcoming danger backlog of Kazakhstan from global trends, technological, economic and social development.

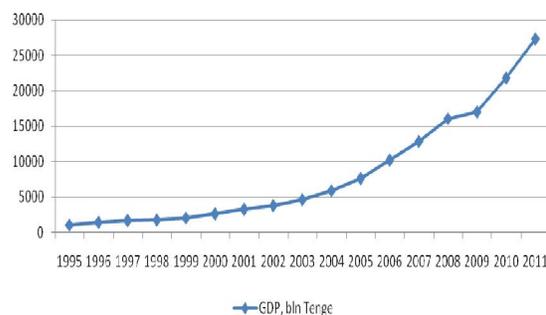
One of the main priorities of sovereign Kazakhstan preserve the achieved level of quality and further increase capacity, closely related to socio-economic and political development of the country level, forming a considerable economic potential, which are the most important characteristics of high economic growth, the priority of market relations between subjects, updated structure of the economy with backbone branches. A key priority of strengthening the sovereignty and statehood of the country is the qualitative development of the Kazakh universities.

At the present stage of development of society information is now the most important strategic resource of any state, society's attitude to information has changed radically. Informatization process efficiency essentially depends on the willingness of education as soon as possible to make the transition from a conservative system to advanced, which is based on the rapid formation of an information space with extensive use of innovation, including information technology. It's about solving problems pairing the Kazakh national education science and industry, as well as with the global higher education and the world of science. Its solution opens up new opportunities for the progressive development of the individual in the education system and the quality of growth of aggregate social intelligence that in the future will have a positive impact on all aspects of public life.

Official sources in Kazakhstan reflects the diverse and fragmented information on the status and development trend of the universities on the state of supply and demand for training for regional labor markets, the quantitative and qualitative structure of personnel and research and innovation capacity of universities, the standard of living of various categories of the population, changes in demographic

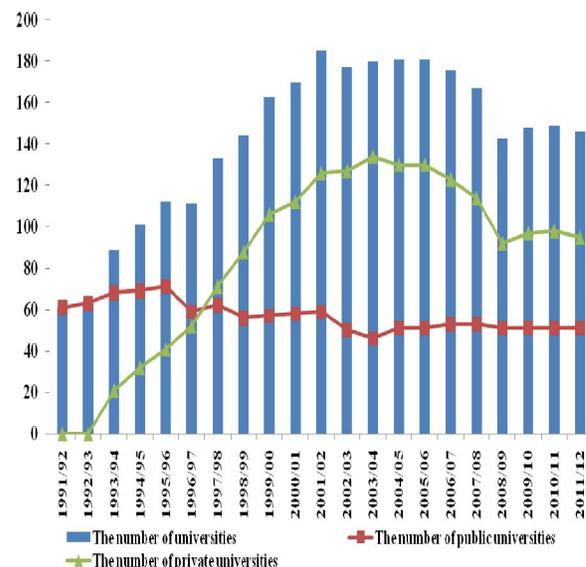
variables accounted for determining contingent future entrants, etc.

Analyzing the emergence of Kazakhstan can be seen that the economy is a sovereign country indicates a stable growth rate. Since growth of gross domestic product (GDP) for the period 1995 to 2011 the average was 123 % (figure 1). Without a doubt, the GDP depend government spending on higher education. Although at the present stage of development of Kazakhstan's higher education system and is a limited public funding [13].



Note - Compiled by the author
Figure 1. GDP growth rate

Using the statistical data of the Statistics Agency for 1995/1996 to 2011/2012 academic years [13], comparable to the number of universities in Kazakhstan, including forms of ownership - state and non-state (Figure 2).



Note - Compiled by the author
Figure 2. Comparison of the number of universities in Kazakhstan

At the time of independence in Kazakhstan in 1991/92 academic year, 61 functioned State University. In 1993/1994 academic year, there were non-state universities, provides education for the state standards with the provision of educational services license.

The peak number of non-state institutions came in 2003/2004 academic year and amounted to 74.4 % of the total number of universities of the country, but in the future there is a tendency to reduce them. So in 2011/2012 academic year, the ratio of public and private universities was 35 % to 65%.

But the full picture about the state of the control system of universities in Kazakhstan does not reflect this information and there is a need for a systematic approach to the evaluation of their control, to identify factors affecting the development of management systems for universities existing economic conditions.

Ministry of Education and Science of Kazakhstan using methods of indirect and direct effects regulates the activities of higher education institutions. Methods of indirect government universities implemented the formation and implementation of macroeconomic policies and practices are implemented through direct exposure to legal, administrative, economic levers.

Overriding strategic goal for dynamically developing Kazakhstan is the formation of intellectual resources. Putting the training of qualified specialists essential for the competitiveness of Kazakhstan's head of state has ordained the need to transform the education sector, harmonization with international standards with the need to focus on the "maximum satisfaction of current and future needs of the national economy for specialists" [14]. To achieve these goals in the long term to be implemented in higher education include:

- To create the conditions and guarantees of quality education;
- Ensure the fundamental basics of mandatory education;
- Carry out practical orientation education;
- The adequacy of education and its relevance to the needs and objectives of the development of science and technology, economics, and culture;
- Implement the international character of education, the introduction of double-degree programs in the field of higher education.

Today, the concept of socio - economic modernization of Kazakhstan aimed at integration in the 30 most competitive and fastest growing countries in the world. Implementing such a large-scale program requires the use of considerable resources, but internal sources of financing for

development is very limited and mainly used to maintain vital public sectors of the economy.

World experience shows that resolving a staggering number of problems of economic transformation and development of the education system is possible through the application of innovative projects and new methods and management. World practice of management development is characterized by an effective impact on the sustainable development of the economy. Current socio-economic trends and patterns of society and business are determined by the dynamic changes in all areas, including higher education. Of course, this creates a competitive space.

Information Technology today become one of the main priorities in the future planning of higher education, both abroad and in many countries of the former Soviet Union. Introduction of information technology is important not only to compete in the market from different universities of higher education, but also for the effective management and operation of these institutions themselves.

In general, many experts point to the following main directions of development of management in which the application of information technology in higher education plays a central role.

1. Learning process - this is the main area of information technology. Here its key objectives are to provide an unlimited network access to educational materials, databases, electronic publishing, digital libraries, electronic copying and distribution of documents, information dissemination on CD-ROM, interactive communication through fast local area networks, the transmission of voice and visual information, and many others.

2. Research - communication with researchers around the world via e-mail, Web conferences, forums, as well as free access to scientific information. These and many other technological solutions can significantly improve the level of research. Dissemination and communication technologies make the existence of the international scientific community real.

3. Administrative process. Today, the management institution of higher education is difficult to imagine without information technology. Starting with simple computerization of income applicants and to ensuring the rapid exchange of information between the administrative staff in the management of all types of resources.

4. E-commerce. To this direction include electronic payment fees, advertising and sale made in the universities of goods and services - research and academic programs over the Internet.

During the introduction of information technology in education are of paramount importance and methodological aspects of this process.

The main problem lies in the methodological aspects of the development of the basic principles of the educational process, in accordance with present information technology. Unfortunately, at the present stage of new technologies artificially superimposed on the traditional forms of education. For example, the ability to combine the demands competently read, writes and read the capabilities of the computer, which makes it better and because of the inertia inherent in man is not conducive to the formation and development of skills and easy access to information resources atrophies in the student a desire to work with educational, scientific literature. The same trends are observed in the academic disciplines related to the development of the drawings, when their conduct is replaced by work in a virtual environment. Technological progress does not stop, so you need to find new approaches to the formation of the main requirements for the new educational standards.

The main factors affecting the efficiency of the use of information resources in the educational process are:

1. Information overload - the reality of the modern world. Excess data is the cause of decline in the quality of thinking.

2. Feasibility of modern information technologies in the following areas:

- Access to a wealth of educational information;
- A clear presentation of the studied material;
- Support for active learning.

3. Performing didactic requirements:

- Clarity, completeness, modernity and structured educational material;
- Timeliness and completeness of test questions and examination tests;
- Interactivity, choice of learning mode.

4. Computer support for each subject studied.

The process of introducing information technology in education has both positives and negatives.

Positive for the use of information technology in education is to improve the quality of education by:

- Choice of a more appropriate method for the student mastering the discipline;
- Self- learner;
- Access to previously inaccessible world-class educational resources;
- Support interactive teaching methods;
- Visual presentation of the material under study;
- The development of independent learning.

Negative consequences of the use of information technology in education are as follows:

- Psychobiological affecting the physical and psychological state of the learner;
- Cultural, threatening the identity of the students;
- Socio-economic, creating unequal access to quality education;
- Political, contribute to the destruction of civil society in multinational states;
- Ethical and legal, leading to uncontrolled use of someone else's intellectual property.

Currently widely used following areas of information technology:

1. Computer programs and training systems, which are: electronic books, or diagnostic test systems, simulators and simulation programs, laboratory systems, expert systems, databases and knowledge in various fields, application and software tools.

2. Systems based on multimedia technology, built using video equipment, various types of drives.

3. Expert intelligent tutoring systems are of practical importance.

4. Information protection based on databases.

5. Telecommunication systems implementing email, newsgroups and other, allowing for a gateway to the world's communications networks.

6. Digital libraries.

7. Electronic Publishing.

8. Information protection system.

A modern tool allows for the diversity of computer-based training systems, but their use requires a sufficiently high qualification of the user.

In the process of informatization of education must be borne in mind that the main principle of using a computer - is the focus on student creativity, learning new skills and abilities, logical thinking. A large spread in education got the Internet. Internet resources are extremely broad - range of application extends from independent work to distance education, and the circle of users and includes students and teachers. Most educational institutions have their own sites, which can read and determine the choice of any prospective student through the Internet.

Despite the benefits of the introduction of information technologies for their use is associated with some difficulties.

- First of all, the creation and support of information security systems, the need for continuous improvement, upgrade using the software.

- Also, the financial costs associated with the acquisition of hardware and software, they need constant upgrading.

- Another problem can be regarded as lack of knowledge, lack of skills, fear of new technology, poor computer literacy among teachers, lack of incentives and motivation for the application of information technology in the educational process.

- In addition, the limited time for managers to explore the information technology generates a lack of transparency in management thinking, confidence, and a sense of threat.

- Go to the next problem can be attributed concern that information technology can have too little value for the proper use of time available for training.

- Do active users of information technology, there are concerns related to the legal aspects, namely the protection of copyright.

4. Conclusion.

For inclusion of information technology in educational processes in higher education can be pre recommend the following measures:

1. Develop and approve a plan for the preparation and integration of personnel, aimed at achieving the implementation of new learning models based on advanced communication technologies.

2. Use resource centers to support research, implementation and dissemination of new techniques based on the use of information technology.

3. Encourage participants in the implementation of advanced communication technologies.

4. Provide enhanced support for the introduction of distance learning courses.

5. Provide the ability to e- publishing online lecture materials, lab manuals, discussing problems.

6. Activate individual students to access e-mail.

7. Encourage electronic publication and research projects studying online.

Deduction. In today's society development processes optimization and computerization in vast areas of the postindustrial economy make high demands for training highly qualified specialists. Optimization of professional activity in modern conditions associated with the use of new information technologies in the design and analysis of manufacturing processes, as well as the trends of scientific research.

Mathematical modeling allows predicting the behavior of an object, identifying the factors influencing the improvement of the educational process.

Ability and willingness to learn throughout their lives, improve and supplement professional knowledge will refer to a specialist creative work, actively apply the latest innovative technology in future professional activities.

Corresponding Author:

Ivilgaziev A.E.

Kazakh Economics University named after T.Ryskulov, 050035, Zhandossov street, 55

Almaty, Kazakhstan,

E-mail: erkin@mail.ru

References

1. Alsharov R.A. 2006. HEI innovation capability//Technology of Kazakhstan. Electronic Journal - Issue number 1. <http://www.technologies.kz>
2. Askarov E. 2007. Process Approach to Quality Management System//Regional weekly - № 45, 46, 47.
3. Wolf A. The Economics and Finance of Higher Education International Encyclopedia of Education. 2010, P. 573-583.
4. Bushuyev S.D. 2010. Creative Technology project and program management. - Kiev: Summit - P.22.
5. Eliferov V.G. Repin V.V. 2005. Business Processes: The regulation and management. Moscow: INFRA-M., - P. 319
6. Sh. Armstrong, B. Chapman. Financing Higher Education and Economic Development in East Asia. ANU E Press, November 2011 – 285 p.
7. Polat E.S. 2002. New teaching and information technology in the education system. - M.: ACADEMIA, - 225 p.
8. Sadovic V., Kruzhalin V. Artyushina I. 2008. How to calculate the quality of education//Rector of the university – No.8. - P.14-18.
9. Shadrikov V.D. 2004. The new model of the expert: innovative training and competent approach//Higher education today. No.4. – P. 12.
10. Shadrin A.V. 2003. Some aspects of the practical implementation of the process approach//Standards and Quality – No.6 – P.15-20
11. H. Ahmed, T. Daim, N. Basoglu. Information technology diffusion in higher education // Technology in Society, Volume 29, Issue 4, November 2007, P. 469-482
12. W. Scheer. 2000. Business process modeling. Second Ed., revised and add./ Transl. from English. M. Vestmeta, Silver Threads - 206 p.
13. Statistics for the 1992-2012 years. Kazakhstan Agency for Statistics. Site Agency of the Republic of Kazakhstan on Statistics : www.stat.kz
14. Address of the President of Kazakhstan Nursultan Nazarbayev to the people of Kazakhstan "Strategy "Kazakhstan – 2050". - Astana: Akorda. - December 14, 2012