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INFORMATION AND COMMUNICATION TECHNOLOGIES AIMED AT INTELLECTUAL NATION FORMATION: FOREIGN EXPERIENCE AND NATIONAL MODEL

The article deals with information-communication technologies aimed at the formation of an intellectual nation. The values forming the intellectual nation and their scientific analysis were studied.

To rationally use the national potential and implement its idea, Kazakhstan should strive for an intellectual upsurge. The creation of an intellectual nation is one of the main components of this problem, which directly concerns modern young generation. To answer these questions, surveys were conducted in focus-groups. It was concluded that an intellectual nation is a nation that has complete and objective information about its genesis, culture, has certain spiritual values that fits well with the conditions of the contemporary picture of the world.

The intellectual nation should work for the benefit of its government. Such a nation is not only an intellect, but also a culture of society, the world outlook of its members and their relation to each other. To create an intellectual nation, first of all, it is necessary to make education accessible and to increase the role of the state language.

Social design and scientific expertise on humanitarian technologies aimed at strengthening trust and responsibility between citizens and the state in the process of forming new Kazakhstani patriotism were carried out. The authors attempt to examine the mechanisms of the work of information and communication technologies.

Recommendations offering technologies have been developed which facilitate the formation of an intellectual nation.

Key words: Information-communication technologies, intellectual nation, social design, scientific expertise.

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Интеллектуалды ұлтты қалыптастыруға бағытталған ақпараттық және коммуникациялық технологиялар

Аталмыш мақалада интеллектуалды ұлтты қалыптастыруға бағытталған ақпараттық және коммуникациялық технологиялар туралы айтылды. Интеллектуалды ұлтты қалыптастыратын құндылықтар мен олардың ғылыми сараптамалық талдауы зерттелді.

Ұлттық әлеуетті ұтымды пайдаланып, оның идеясын жүзеге асыру үшін Қазақстан ең бірінші рухани байлыққа ұмтылуы тиіс. Интеллектуалды ұлт құру – осы проблеманың негізгі компоненттерінің бірі, ол қазіргі заманғы жастарға тікелей қатысты. Бұл сұрақтарға жауап беру үшін фокус-топтарда зерттеу жүргізілді. Зияткерлік ұлт – оның генезисі, мәдениеті туралы толық және объективті ақпарат беретін, әлемнің қазіргі заманғы шарттарына сай келетін белгілі бір рухани құндылықтарға ие ұлт деген қорытынды жасалды.

Интеллектуалды ұлт өз мемлекетінің пайдасына жұмыс істеуі керек. Мұндай ұлт – бұл интеллект ғана емес, сонымен қатар қоғамның мәдениеті, оның мүшелерінің дүниетанымы және

олардың өзара қарым-қатынасы. Интеллектуалды ұлт құру үшін, ең алдымен, білім алуды жеңілдету және мемлекеттік тілдің рөлін арттыру қажет.

Жаңа қазақстандық патриотизмді қалыптастыру үдерісінде азаматтар мен мемлекет арасындағы сенім мен жауапкершілікті нығайтуға бағытталған гуманитарлық технологиялар бойынша әлеуметтік жобалау және ғылыми сараптама жүргізілді. Авторлар ақпараттық-коммуникациялық технологиялар жұмысының механизмдерін зерттеуге тырысады.

Зияткерлік ұлт қалыптасуына ықпал ететін технологиялар туралы ұсыныстар айтылды.

Түйін сөздер: ақпараттық және коммуникациялық технологиялар, зияткерлік ұлт, әлеуметтік жобалау, ғылыми сараптама.

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Информационно-коммуникационные технологии, направленные на формирование интеллектуальной нации

В статье говорится об информационно-коммуникационных технологиях, направленных на формирование интеллектуальной нации. Исследованы ценности, формирующие интеллектуальную нацию и проведен их научный анализ.

Для рационального использования национального потенциала и осуществления его идеи, Казахстан должен стремиться к интеллектуальному подъёму. Создание интеллектуальной нации – одна из основных составляющих этой проблемы, которая напрямую касается современной молодежи. Для ответов на данные вопросы проводились опросы в фокус-группах. Были сделаны выводы, что интеллектуальная нация – это нация, которая имеет полные и объективные сведения о своем генезисе, культуре, располагает определенными духовными ценностями, хорошо вписывается в условия современной картины мира.

Интеллектуальная нация должна работать на пользу для своего государства. Такая нация – это не только интеллект, но и культура общества, мировоззрение его членов и их отношение друг к другу. Для создания интеллектуальной нации, в первую очередь нужно сделать доступным образование и повысить роль государственного языка.

Проведены социальное проектирование и научная экспертиза по гуманитарным технологиям, направленным на укрепление доверия и ответственности между гражданами и государством в процессе формирования нового казахстанского патриотизма. Авторы делают попытку рассмотреть механизмы работы информационных и коммуникационных технологий.

Разработаны рекомендации, предлагающие технологии, способствующие формированию интеллектуальной нации.

Ключевые слова: информационно-коммуникационные технологии, интеллектуальная нация, социальное проектирование, научная экспертиза.

1 Introduction

High technologies are a cutting edge of human thought, and the degree of responsibility of those who generates, develops, promotes, or borrows them is immeasurably high in terms of international integration (Фикенс Ж., 2000).

Communicative incompetence borders with professional ignorance in the age globalization. The pace of international communications is extremely high and it requires high efficiency of interaction, mobility as well as impeccable accuracy of information transmitted. Man-made disasters are the highest fee for incompetence in the XXI century.

Thus, the globalization phenomenon is beyond purely economic frameworks, in which it tends to be interpreted by many researchers of the subject and

which covers almost all spheres of public activity, including politics, ideology, culture, lifestyle as well as the very conditions of human existence.

The role of information technologies in the development of society is to accelerate processes of receipt, distribution and use of new knowledge by the society.

In the history of civilization development, there have been several information revolutions when major changes in the field of information processing have led to the transformation of social relations, acquisition of a new quality by human society.

The first revolution is associated with the invention of writing, which led to huge qualitative and quantitative jump in the development of society. From that time, we have had the opportunity to transfer knowledge from generation to generation.

The second revolution (mid XVI century) was caused by the invention of printing, which radically changed the industrial society, culture, organization of activities.

The third revolution (late XIX century) happened due to the invention of electricity, which caused the invention of telegraph, telephone, radio, allowing transmitting and storing information in any amount.

The fourth revolution (70s of XX century) is connected with the invention of microprocessor technology and personal computers. Computers, computer networks and data transmission systems are produced on microprocessors and integrated circuits.

In the same years, the analysis of scientific and technical progress tendencies and rapid development of new technologies in the U.S. has led to appearance of two ideologies – information society and post-industrialism. The idea of post-industrial society has been put forward by the American sociologist D. Bell in his book “The coming of post-industrial society. A venture of social forecasting” published in 1973, in which he divided the history of human society into three stages-agrarian, industrial and post-industrial. Developing Bell’s ideas, another American philosopher E. Toffler (the book “The Third Wave”, 1980) examines the history of human civilization in the form of successive waves.

Today, under information society we mean a society in which information is a key component of economic and social life.

Information society is a society in which most of working people are employed in production, storage, processing and realization of information, especially its highest form-knowledge.

Production of an information product rather than a material product is the driving force of the development of society. Information gained a status of a commodity and came up to other material resources in order of importance for the society. Thus, about 70% of the cost of information is in the cost price of a modern car.

A sector of creation of information technology means, information processing and information services is becoming a dominant sector of the economy. Gross sales volumes in various sectors of the economy can serve as confirmation.

Many authors, both scientists and practical people widely use the phrases “information technology”, “information and communication technologies”, “PR technologies” etc. However, the question on the essence of this concept on characteristics of communication technologies on criteria of technologizing

communicative processes remains open. The basic concepts presented below reflect the essence of this concept at the fullest extent possible (Астахова Т., Толкачева Е., 2006),(Даффи Д.,2006)

2 Methods and methodology

In constantly changing global market conditions, determining dynamic of social-economic and political processes, performance requirements of government activities, their ability to react quickly and make effective solutions to new challenges is increasing. In this regard, the need to improve the process of governance and development of information and technology support of government bodies’ activities is growing.

These issues were indicated in the President’s address to the people of Kazakhstan called “Kazakhstan-2050 strategy”. Thus, under the direction of “economic policy of a new course”, the need for modernization of the management system of public assets in order to increase efficiency was noted. To achieve this objective the strategy sets an objective to stimulate the development of sectors of future economy, which include ICT sector.

One of the main objectives of the ICT industry is to create a digital transport environment to support informatization processes, to develop modern telecommunication infrastructure and its integration with the infrastructure of other states. Therefore, development of transit potential in the field of information technologies and integration of national economy into the global environment also act as an important task and one of the priorities of infrastructure development indicated in the strategy.

In order to develop promising technological directions for transition to the next stage of industrialization the task of further development of Innovative Technologies Park as one of the leading innovative clusters of the country is set.

3 Research

Thus, the tasks, specified by the President in “Kazakhstan – 2050” strategy confirm the importance and role of ICT development in achieving long-term growth of the economy of our state.

As the experience of developed countries shows, (Human Capital in Transformation: Intellectual Capital Prototype Report, 1998) an important step in informatization society strategy, which distinguishes it from other countries, was that the state oriented not only for young generation, but also to every social group. Training and retraining programs were aimed at touching all social groups by informatization, allowing to increase the number of

workers who are acquainted with modern information technologies for a short period of time. In this regard, in order to ensure equitable development of computer literacy throughout the country it is necessary to develop training programs focused on all social groups. Relying on the experience of developed countries, which have reached considerable success in this issue, we want to offer to develop a procedure of organization of training centres and training Internet resources depending on the number of people and demand in these regions and to provide their implementation by local executive bodies in the sphere of informatization (Голубкин В.Н., Клеева Л.П., Патока Л.В., 2003). The last decades of the XX century were characterized by transfer to a new model of economic development for developed countries - from hard growth to smart growth on the basis of ICT, electronic equipment, resource-saving technology and new management systems that required a fundamental restructuring of an investment process and led to significant changes in the economic structure. Information economy is characterized by structural reorganization based on high-end and resource-saving technologies, modern technologies with high intellectual and information capacity. The basis of the information economy is knowledge-intensive industries producing products with high intellectual capacity. The information economy is characterized by increasing role of information services sector and related changes in the national economy. The information sector is the basis for gradual transformation of traditional forms of economy into the economic system of information type (Адамадзиев К.Р., Адамадзиева А.К., Магомедгаджиев Ш.М., Гаджиев Н.К., Омарова Э.Ш., 1987.). In the new economy the role of information capital, including technological, scientific, technical, socio-economic and spiritual information that is used to generate income increases. The basis of information capital is information technologies. Information factor modifies market mechanism of the economy: the methods of competition change, local, regional, national and international markets of information and telecommunication products and services operating under new principles are formed. The key sector the “new” economy is the sector of information and communication technologies, which ensures creation, transfer, and use and analytical processing of knowledge and information. Telecommunication infrastructure becomes the condition that determines the level of competitiveness of products and industry services. ICT sector has exceeded total volumes of oil and steel industry in the world. This is also confirmed by the growth statistics: if the “old” economy is grow-

ing by 1-3% per year, the tendency in the global IT industry for the recent years is 8-10% .(Дятлов С.А., 2004). In developed countries, most of the employees are involved in the production of information, information services and the provision of services, and less than 30% of the active population is accounted for by industry and agriculture. Under the influence of informatization labour productivity grows, new methods of competition appear and a change in economic structure occurs. As a rule, new industries have higher growth rates compared to conventional ones [43] (Коротков А.В. 2005).

A.K. Dzhilkibaeva, a senior finance expert of the Centre of Scientific Economic Expertise of “Economic Research Institute” JSC notes Джилкибаева А.К., 1998) that in the past decade information and communication technologies (ICT) in the society take up stronger positions, entering not only everyday life of the population, but almost all spheres of economic and social sectors.

However, global experience shows that not all current approaches to the development of ICT sector have the same positive impact on the social and economic development of the country. In this context, solving the problem of selection and development of proper public policy to the development of ICT sector is of a particular interest (Беккер Г., 2000). As the experience of developed countries shows, (Османова А.М., 2012) an important step in informatization society strategy, which distinguishes it from other countries, was that the state oriented not only for young generation, but also to every social group. Training and retraining programs were aimed at touching all social groups by informatization, allowing to increase the number of workers who are acquainted with modern information technologies for a short period of time. In this regard, in order to ensure equitable development of computer literacy throughout the country it is necessary to develop training programs focused on all social groups. Relying on the experience of developed countries, which have reached considerable success in this issue, we want to offer to develop a procedure of organization of training centres and training Internet resources depending on the number of people and demand in these regions and to provide their implementation by local executive bodies in the sphere of informatization (Новая постиндустриальная волна на Западе, 2009).

These steps will undoubtedly bring Kazakhstan to creation of intellectual nation. Seysenbayeva Zh. A. studies the problems of intellectual nation in detail (Сейсенбаева Ж.А., 2012). She mentions the following as necessary things in formation of a per-

son's quality during the process of socialization:

To love the motherland, to be a citizen with an active life philosophy (necessary personality for the society).

To be a patriot (knowledge of national values and ability to keep them).

To be healthy (a versatile personality, which is necessary to be healthy).

Ability to analyze world events, to benefit from the decisions made and to apply them.

Ability to protect yourself and implement precautionary measures (respecting and obedience of laws).

Ability to implement your capacity and principles.

Ability to get satisfaction from the work performed, desire to realize the goals, and to have good mood.

The need to understand the meaning of life.

The need of creative development.

A student expedition first organized this year during the period from June 19 to July 02 within the framework of "People-to-people" campaign has conducted the researches in Mangystau, Kyzylorda and Semipalatinsk regions. Under this activity young scientist:

1) collected the necessary materials for "Semi-otic and symbolic source book of intellectual properties of Kazakhstan citizens";

2) studied humanitarian technologies on social projecting aimed at formation of intellectual society citizen;

3) studied public opinion of Kazakhstan citizens on the issues of "Kazakhstan after 2015", specified in the Millennium Development Goals of the UN.

Also during the expedition an information campaign called "A letter to the village", devoted to the problems of our villages and situation of villagers, has been held.

In addition, in order to identify opinion on the possibility to create intellectual nation among Kazakhstan young people a research in focus groups was conducted. Young people aged 18-20 from Kyzylorda, Atyrau and Almaty took part in them.

Many people in their responds noted that "Intellectual nation" project includes three components: innovative development of educational system, informational revolution and strengthening national and cultural values of young people. Their implementation will make Kazakhstan education and science competent.

There are required factors to create intellectual nation:

– first – transition to a new form of financing: basic, program-targeted and grant.

– second – establishment of national scientific councils on priority directions for making decisions on national projects financing.

– third – establishment of National Centre of State Scientific and Technical Expertise.

The main task of reforming education is to raise the system of education to the level of leading world samples.

Satisfaction, formation of spiritual needs and receiving education by every pupil or student considering his/her possibilities. The approach should be as follows: education for a person, but not a person for education. Only in this case we can improve the status and authority of education, educational system in the state and public life. These changes in their turn should serve as a warrantor of formation of intellectual nation.

Some of the focus group participants tried to highlight several problems in "Intellectual Nation" program. It was noted, that the emphasis should be laid on the development of critical and creative thinking of young people who are the future specialists. All the countries that have achieved rapid growth in their scientific potential, started with one and the same-with the preparation of appropriate personnel, and especially young scientists. Today, the role of teacher and professor is changing. The most valuable is a teacher who is able to develop student's talents and to get him interested in the subject. Here it is appropriate to recall the words of the President of the country that we need to create a core of national intelligence. We need intelligent people who are able to compete at the international level. Today it is impossible to prepare intellectual person without using traditions and innovations. The traditions of high human potential, achievement of quality learning and education results and providing all conditions for creative self-learners remain the same. This is an introduction to the development of research projects, participation in scientific society, development of creativity at academic competitions etc. Nowadays the main problem is that intellectual nation should become a real movement and a baseline for all institutions of society. If it happens within a particular level, which is critical to this process, it should be leader and expert community, which already has professional competence and knowledge. Here it is necessary to stimulate growth in the number of people with leadership skills as "Intellectual Nation" program develops. Higher education institutions need some leadership work, active involvement of trustees, patrons, use of new forms of student self-management, personnel policy and work with teachers.

In terms of innovation, development institutions were established and a task of creating and implementation of industrial and innovation development was first set in Kazakhstan. All this was quite a strong base for initiating “Intellectual Nation-2020” program by the President of our country. One of the most important ways of bringing the state program aimed at formation of intellectual nation to people is Mass Media. Usually it is television. Due to visually, presence effect and impact on emotional perception television has become one of the main allies of the state in the process of formation of intellectual nation. The Internet takes the second place. We cannot imagine modern processes of information transmission without the World Wide Web.

The answers of some of the focus group participants were very emotional. For example, we got the following answer when we asked to list the necessary factors to form intellectual capital of people of the Republic of Kazakhstan: first we should terminate to make any allowances to those people who are in relations with any authorised people, i.e. to eliminate employment of someone’s brothers, brothers’ wives or sisters of brothers’ wives and etc., to eliminate managers’ children to pass queues for concerts and etc. We need everyone to feel equally, to understand their significance only if they have deserved it and to see only themselves but no one else as builders of their destiny. People should not hope for their relations. In addition, the same with corruption. Devil takes the corruption! We should burn and destroy it! Everyone should feel equal. No one should be able to express his or her insolence. Secondly, when children reach 18 years old, we should separate them from their parents and give them a little room in a hostel in order to learn them to live independently. Schools and other educational institutions should be closed. Of course, it is necessary to provide everyone with available development opportunities. Together all these would be enough to correct the mentality and lay the foundation to improve our intelligence level as part of the total. Still the idea is very amorphous and hard to achieve.

The students listed the following when we asked them to name the factors that are the basis for formation of intellectual nation:

- environment where they grew up and live;
- people surrounding them;
- personal skills;
- pursuit of knowledge;
- education;
- heredity, brain building;

– understanding and interpretation of the information received;

– reading books and informative articles.

Many of the respondents pointed out that in order to form an intellectual nation we have to think about an intelligent government. The question that troubles everyone: “Will the Minister of Education of the Republic of Kazakhstan be able to pass UNT (Unified National Testing) and get full 125 marks? Every year they find incorrect questions in these tests because of which children lose marks. This is a great stress for a young person. Why do mistakes become a norm? Why do we have such a thing as “giving notice of appeal if an incorrect question has been found”? That is the Ministry is prepared in advance that there will be such mistakes and it makes people be ready. First course students are most concerned about this problem, as it is recent for them.

Many of the focus group participants believe to develop successfully Kazakhstan society needs competent, business, competitive, enterprising individuals, armed with quality knowledge. Their recommendations for the development and formation of intellectual nation relate primarily to education.

A highly developed informational type of society, which modern Kazakhstan strives to be, is characterized by the widespread introduction of new information and high technologies, development and growth of knowledge industry. Nowadays, education is a priority value; it also has practical significance in different countries. In the short term, the system of professional and technical education will face relatively new problems.

The first problem concerns development of social partnership in the sphere of professional and technical education and employment. It must unite the efforts of all subjects concerned in this area—authority of employers and young people themselves as recipients of professional education.

4 Conclusion and results

Based on the above we can make the following conclusions:

1. Today’s youth see people who received Kazakhstan education as a basis of future intellectual nation. It does not mean that education should be limited only to the country; it should be directed to its prosperity. The model of intellectual nation must include patriotic aspects – people have to know their native language and culture very well. Especially the focus groups conducted in the regions have shown these requirements very clearly. Young people

spared no time and efforts to study the spiritual values of their region in details.

2. The model of intellectual nation involves the integration in global scientific and education processes. That means an intellectual nation representative must not be isolated within one country. In order to create an intellectual potential we have to use the best foreign experience taking into account social, economic, cultural and crisis world situations. It is here where information and communication technologies (ICT) should work, covering all the spheres of economic and social sectors. The role of information, knowledge and technology, which are the key components of information society, must grow rapidly. The availability of a number of information services should be increased, which will have positive impact on the human capital development and will promote the growth of Kazakhstan's competitiveness.

3. The model of intellectual society must include the development of science and scientific-research institutions. Without the development of contemporary science and without our own scientific schools it is impossible to create an intellectual nation.

4. The model of intellectual nation implies continuing education starting from a kindergarden. The President of the Republic Nursultan Nazarbayev in his address clearly defined: "In order to become one of the world developed countries we need appropriate knowledge. Knowledge will make Kazakhstan one of the 50 developed world countries". "Balapan" program is focused on complete coverage of preschool children. It is planned to open 20 intellectual schools with enhanced studying of mathematics for talented children; these programs enable to lay the ground for the formation of intellectual nation. The programs mentioned above are the beginning of our country's innovation development.

We must continue to develop different types and models of education institutions, develop programs of author training courses, expand the range of education and developing technologies, establish contacts with foreign teachers etc.

New forms of education institutions must function in the Republic.

5. Undoubtedly, the intellectual nation can only consist of people who received proper education. All the focus group participants mentioned this fact. That means today's youth perceive education and breeding as inseparable factors of a personality. The necessary aspects of education should include the following:

- Personal skills.
- Pursuit of knowledge.
- Development of mental abilities.
- Rich inner world.
- Humanity.
- Understanding and comprehension of the information received.
- Reading books and educational materials of the mass media.

Education should start from a family. Therefore, we need to promote family values at the state level.

6. The necessary factors of the formation intellectual personality qualities may include the following:

- love for the native land;
- active life position;
- patriotism;
- knowledge of national values and the ability to preserve them;
- healthcare;
- the ability to analyze world events;
- benefit from the conclusions made;
- strict compliance with the legislation of the Republic of Kazakhstan;
- persist in one's opinion;
- the ability to get satisfaction from the work performed;
- desire to realize the goals;
- the need of creative development.

7. It is necessary to equalize the difference between urban and rural schools not only through provision of rural quota to enter the universities, but using information and communication technologies.

8. Informatization of education and introduction of ICT in education and breeding processes should become one of the priorities of the process of intellectual nation formation. The goal of ICT introduction is the global intensification of intellectual activity through the use of new information technologies: computer and telecommunication.

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