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Application of Information and Communication Technologies by the Future Primary School Teachers in the Context of Inclusive Education in the Republic of Kazakhstan

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ABSTRACT

Many children with disabilities in the Republic of Kazakhstan face up to physiological difficulties in moving, communicating, learning, along with problems related to learning various computer programs. Computer technologies are of particular importance for children with disabilities. By using information and computer technologies, these children are able to not only communicate and move around, but also to go into a full education. Unfortunately, at the moment there is much tension in Kazakhstan around the issue of using information and communication technologies (ICT) in the context of inclusive education. Presently, many primary school teachers are not adequately trained to use information technologies. The objective of this article is to study the problem of ICT use and to promote high-quality education in an inclusive environment. In order to solve this problem, the authors have developed a special training course for students of higher educational institutions, providing detailed theoretical and methodological foundations of inclusive education, methods of ICT use at different lesson stages for primary school children in the inclusion context. "What matters most - it is not the fact that the student uses new technologies, it is rather how it contributes to the development of his knowledge" C. Ehrmann.

KEYWORDS
Primary education, information and communication technologies, inclusive education, teacher training, curriculum

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Introduction

Inclusive education presents a combined training and education of children with disabilities and children without such restrictions. The integration processes that occur in the world community in all spheres of human activity, determine the

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task of creating conditions for providing equal rights and opportunities for all citizens. The inclusion of children with disabilities in social and cultural activities implies the need to ensure available and high-quality education for all citizens. According to statistics and global estimates, there are 186 million children with disabilities who did not get primary education.

If the technology is not adapted to the needs of users, and the information is presented in unavailable format, adaptation of such people to the information society would be very problematic. Moreover, the digital divide, in turn, will result in the exclusion of such people from public life (Tokareva, 2006). Considering the situation in the Republic of Kazakhstan, the children with disabilities get their primary education only in specialized institutions. Naturally, this approach to education does not fully ensure social inclusion of such children.

The use of ICT with the view of providing inclusive education (Tokareva, 2006, Report to the European Commission, 2014; Rambousek, Štípek, Procházka, & Wildová, 2014) and teacher training (Balykina, Buzun & Gribko, 2013; Veledinskaya & Dorofeeva, 2015; Benassi, Overson & Hakala, 2014; Ozdamlia & Ozdala, 2015) is actively discussed in the world research community. However, various studies show that is still a lot of problems associated with the implementation of inclusion principle.

One of the areas of the education system development implies widespread introduction and use of modern information technologies in educational activities, which significantly expands the possibilities of modern educational methods and training concepts. The introduction of information and communication technologies (ICTs) into the school education is inextricably linked with the need to prepare future teachers, which leads to another urgent problem – development of the new curriculum. Such training programs should consider current ICT trends related to education, and be focused on training the new generation of teachers in the context of an inclusive approach to education.

Thus, there is an urgent need to develop principles and methods of training future teachers, who would ensure widespread introduction and development of inclusive education through the active use of ICTs.

Background Paper

Comparative analysis of the Russian and Western inclusive education trends identified the need to use positive experience of the Western countries: creation of resource centers for inclusive education at various educational institutions; formation of high motivation in all subjects of inclusive education aimed at further implementation of inclusive education practices; development of professional competence of teachers in the field of inclusive education.

Modern ICTs includes distance learning (DL) services. DL presents a set of educational services provided by means of a specialized educational environment at any distance from students. The use of DL technologies and tools in the educational process of higher educational institutions is reflected in the works of many researchers (Balykina, Buzun & Gribko, 2013; Bayne, 2015; Veledinskaya & Dorofeeva, 2015). DL contains the elements of full-time, part-time, evening and correspondence learning based on information technologies and multimedia systems. Modern telecommunications and electronic media allow overcoming setbacks of traditional learning, while retaining all their advantages, and realizing new opportunities that can improve training effectiveness, development and

education of students. DL was studied both by domestic and foreign researchers (Veledinskaya & Dorofeeva, 2015; Badarch, 2013; Boonen, 2014).

Implementation of information and telecommunication technologies was studied in various papers (Boonen, 2014; Macleod et al., 2016; Information memorandum, 2005; Analytical review, 2009). Recent advances in the development of learning automation processes, development of educational systems based on artificial intelligence theory were described in (Macleod et al., 2016). The papers (Boonen, 2014; Ateş, 2013; Eskay, Ezegbe, Anuanwu & Ikwumelu, 2013) contributed to the development of theoretical and applied issues related to improving the efficiency and quality of interaction with users in the information training systems.

Foreign authors also actively explore the problem of using information technology in teaching. Thus, the author (Boonen, 2014) examines various possibilities provided by using the Internet and multimedia training programs. The papers (Report to the European Commission, 2014; Ateş, 2015) emphasize the advantages of the so-called cooperative learning through interactive websites that allow online "meetings", exchange of opinions and viewpoints, discussing various issues.

In addition, the study of pedagogical practices of inclusive school education remains an open question, as indicated by a number of studies (Samartseva, 2011; Shumilovskaya, 2011; Bjekić, 2014; Smantser & Ignatovitch, 2015). Inclusion implies a bridge between conventional and special pedagogy in the form of adapted training (Eskay, Ezegbe, Anuanwu & Ikwumelu, 2013; Bjekić, 2014; Smantser & Ignatovitch, 2015). Therefore, school practice should be seriously changed, so that the school could be focused on student diversity and uniqueness of each person, rather than on an average student. At the same time, one should keep in mind that some students have serious and fatal health problems, and the measures aimed at satisfying their specific needs require special efforts.

E. G. Samartseva (2011), Y. V. Shumilovskaya (2011), N. N. Bystrova (1999), I. N. Khafizullina (2015) considered readiness of specialists to work with disabled children with the view of identifying the attitudes of teachers towards inclusive education and the extent of their influence on social interaction of students with limited development opportunities within the general education schools, as well as the impact of the teacher training programs in higher educational institutions on their commitment to implement inclusive education.

According to international experience, inclusive education requires a system approach to the co-ordinated policies and practices, covering a number of thematic areas such as teacher education, early intervention, development of curriculum and evaluation practices in addition to using ICTs. The activities of international organizations such as UNESCO IITE and the European Agency for Special Needs and Inclusive Education can be crucial in providing this kind of education.

For example analytical note "ICT for Inclusive Education" (2010) developed by UNESCO IITE provides guidance on the development of an effective policy aimed at integrating people with disabilities into the national education system based on the use of ICTs. Analyzing a number of documents drawn up by the UNESCO Institute, the authors of this research argue that the problem of using ICTs in inclusive education is very urgent for Kazakhstan and requires immediate actions, while the international experience in the implementation of ICTs has been already developed. Therefore, this paper focuses on the development of several methodological

recommendations based on specificity of the educational system of the Republic of Kazakhstan, public interest, and ethnic characteristics. The special training course for primary school teachers was developed and implemented in a higher education institution.

Objective

The purpose of this paper is to study basic problems and to identify practical skills related to the use of information and communication technologies by the future primary school teachers in the context of inclusive education.

Research questions

The objectives of this study include the following:

- analysis of the training program and training curriculum of primary school teachers, taking into account the features of inclusive education and the use of ICTs.
- development of the syllabus "Application of information technologies in the work of primary school teachers with disabled children".
- testing the specialized course at the Abay Kazakh National Pedagogical University.

Research questions

The overarching research question of this study was as follows:

What are the participating science teachers' levels of computer usage in instruction and how will the TPDP impact their views about using computers?

Methods

In order to achieve the above goals and to verify initial assumptions, the authors used a number of theoretical (comparative analysis of philosophical, psychological and pedagogical literature, legal and educational-methodical documentation, analysis, synthesis, generalization, simulation) and empirical (study and generalization of pedagogical experience; testing of students and teachers, conversation, observation, student performance monitoring, evaluation of student participation in intercollegiate competitions, experiment) methods.

Identification and assessment of various educational management strategies aimed at training effective future experts demand using modern information technology, which allows assessing the status and effectiveness of student learning techniques, the impact of educational management techniques; relevance of the choice of learning strategies; offer alternative ways to improve the quality of results.

The task of forming a training course is time-consuming. In order to solve this problem, one needs to know the course subject, the proportion of classroom and extracurricular academic hours and to provide the correct sequence of topics. Development of a syllabus is based on a large number of requirements fixed in the regulatory documents. In general, these requirements are rather vague. In practice, these problems can be solved intuitively, without analyzing the situation in its entirety.

The use of ICTs allows reaching qualitatively new results in education, improving the educational and management process, as well as their performance. Development of methodological foundations for the logical content and structure of the training module is time-consuming. Teachers-developers should bring all

teaching materials into line with specific requirements, providing ongoing analysis of promising areas, including the analysis of possible difficulties that may arise in the training process, being able to diagnose and correct them.

Even state-of-the-art information technologies cannot completely replace the teacher in the classroom. However, their use by teachers helps saving time to get ready prepare for the lesson, providing the possibility to intensify the educational activity, using different ways of obtaining new knowledge, processing test results.

Both teaching and learning issues are essential for the information society. The ICT development creates an environment characterized by rapid and continuous change. In the context of such changes, one needs to develop a fundamentally new approach to the educational process. Today, any person needs not only new practical skills and theoretical knowledge, but also the ability to continuously improve his/her knowledge and skills. In other words, the humankind should use and develop a culture of lifelong learning in every possible way. The use of ICTs in the teaching and learning process opens up unique opportunities and prospects, suggesting that humanity is on the verge of an educational revolution, leading to significant changes in all spheres of human activity (Information memorandum, 2005).

Results

The analysis shows that children with disabilities present the most significant and the most marginalized minority group in the world in terms of education. At the same time, both governments and education authorities still face up to a challenge in terms of achieving the development goals of the Millennium Declaration, which stipulated that by 2015, all children should have received primary school education (Wagley, 2006).

At this point, public policy of the Republic of Kazakhstan in the field of ICT implies the following (MESRK, 2014):

1. Development and improvement of the regulatory and legal support;
2. Development of info communication infrastructure of educational institutions;
3. Technological and technical infrastructure support;
4. Creation of open and distance learning systems;
5. Creation of national digital educational resources;
6. Implementation of the Education Management Information System (EMIS);
7. Training of teachers and senior executives.

Education of children in special classes is organized in accordance with regulations. In the school context, relevant legal framework has already been formed, which includes the following instruments: State Program of Education Development in Kazakhstan for the period 2011-2020; the Law of the Republic of Kazakhstan "On Marriage and Family"; the Law of the Republic of Kazakhstan "On the rights of the child in the Republic of Kazakhstan"; the Law of the Republic of Kazakhstan "On social protection of disabled persons in the Republic of Kazakhstan"; the Law of the Republic of Kazakhstan "On Social, Medical and Educational Support for Children with Disabilities"; the Law of the Republic of Kazakhstan "On Education"; the Constitution of the Republic of Kazakhstan; guidelines for the organization of special (correctional) educational institutions for children with disabilities (No. 730 dated 24 November 2005); the regulation related to the classes of correctional and developmental education in secondary schools of the Republic of Kazakhstan; recommendations related to the integrated (inclusive)

education of children with developmental disabilities (No. 4-02-4 / 450 dated 16 March 2009); the curriculum.

Major international instruments that protect and guarantee the rights of children in this category include the following: "The Universal Declaration of Human Rights"; "Declaration on the Rights of Disabled Persons"; "Declaration on the Rights of Mentally Retarded Persons"; "Convention on the Rights of the Child"; "Standard Rules on the Equalization of Opportunities for Persons with Disabilities".

The idea of inclusive education revealed the need to study the concept of "professional readiness of teachers in the context of inclusive education". Training of modern teachers, able to implement inclusive education, is an extremely urgent and challenging task for the higher pedagogical school. It is a student-centered, spiritual and moral teacher training, providing the ability to independently improve personal adequacy, to use information and communication technologies required for this specific work. Despite the fact that the willingness of teachers to implement inclusive education is considered in many psychological and pedagogical studies as the main factor of its success, current theory and practice of the Republic of Kazakhstan lacks a universal approach to defining the above concept.

According to the Strategic Plan of the Ministry of Education and Science of the Republic of Kazakhstan for the period 2014-2018, current situation in this field is as follows: "Low quality composition teachers: 16.3% of the total number of teachers have the highest teaching category, 31% – the first category. One in five working teacher is at the age of 50 and older. Teaching experience in 12.8% of the total number of teachers is below 3 years. The annual employment rate makes only 3.3% of the number of young teachers". More details are shown in Table 1 (MESRK, 2014). The table shows that the share of teachers working in preschool and general secondary educational institutions, general additional education, who improved their skills in the field of inclusive education, is increasing every year by 20% (starting from 2014).

Taking into account relevance of improving accessibility and quality of education for people with disabilities, IITE developed the project "ICTs in Education for People with Special Needs". One of the most significant achievements of this project is the development and publication of a specialized training course "ICTs in Education for People with Special Needs", dedicated to the issues of general and special use of ICTs in the full-time and distance learning of people with motor, visual, auditory, speech and intellectual impairment as well as specific learning difficulties (Oralbekova, 2015).

Methods of using ICTs in the classroom are quite diverse and can be implemented as:

- representation of information materials through multimedia (pictures, videos, sound recordings, presentations, etc.);
- study of models representing objects, phenomena and processes in an interactive mode (interactive models, virtual labs, constructors for disciplines related to natural sciences);
- organization of project activities using ICTs, which provides conditions for independent research, develops skills of independent creative activity, presentation skills;
- using electronic equipment in natural science experiments, processing outcomes of experiments, report preparation;
- solution of training, creative and research tasks;

- development of information search skills;
- objective and operational assessment skills, ets.

Table 1. "Task 1.2.1. Providing high-quality schooling services"

Indicators of direct results	Information source	Units of measure	Reporting period		Target period				
			2012 report	2013 report	2014 report	2015 report	2016 report	2017 report	2018 report
Percentage of children covered by inclusive education, of the total number of children recommended for inclusive education	Management reporting data	%	20,2	23	26	30	32	35	40
Percentage of schools, which provided conditions for inclusive education	Management reporting data	%	19,7	20	22	25	27	30	35
Percentage of schools that provided "barrier-free environment" for children with developmental disabilities	Management reporting data	%	23	25	27	29	31	33	35
Number of medical and psycho-pedagogical consultations (MPPC)	Management reporting data	Number	56	57	62	67	72	78	82
Number of resource centers aimed at the improvement of inclusive education	Management reporting data	Number	2	5	6	7	8	9	10
Proportion of teachers of pre-school, secondary educational institutions, and general additional education institutions, who improved their skills in the field of inclusive education	Management reporting data	%			30	50	60	80	100

It is believed that the teacher plays a crucial role in the educational process. Therefore, improvement of the education system should start with future teacher's training. Teacher training should be carried out by methods that they will use later in their future work. The problem that will inevitably arise both for teachers and students of pedagogical universities when trying to use new methods (such as ICTs in teaching), is that teachers themselves were taught according to the old program, without ICTs (USECSO, 2005).

Table 2. Exemplary use of ICTs in different lesson stages (based on expert assessment method)

	Lesson stages	*ICT application options*
1.	Assimilation of new knowledge, development of skills	Audio and video fragments, sound recordings, electronic presentation
2	Knowledge generalization or systematization	Interactive game, educational games
3.	Application of knowledge and skills	Software training tasks
4.	Assignment control	Application of software providing interactive exercises and activities such as: 1. Trivia game – tasks based on multiple-choice (4 types of tasks). 2. Filling the blanks. 3. Matching (3 types off tasks). 4. Crossword. 5. Restoration of logical sequence 6. Restoration of classification 7. Open questions
5.	Knowledge control	Testing software, online didactic materials

In view of relevant requirements, the authors of this study developed specific training manuals. In order to improve the knowledge and practical use of ICTs in the inclusive education of future elementary school teachers and to develop their skills related to the inclusive education process, the original syllabus "Application of information technologies in the work of primary school teachers with disabled children" was developed".

The objectives of the training course are the following:

- to get basic knowledge of ICT in inclusive education, including the international experience;
- to study regulations and changes in the education system of the Republic of Kazakhstan, the Law of the Republic of Kazakhstan "On education" and the State Compulsory Educational Standard (SCES);
- to develop competences required to deepen the ICT skills in the future elementary school teachers based on the experience and new ICT trends in inclusive education;
- software training;
- to develop an independent approach to the selection of methodical guidelines for modern education process, with due regard to the international experience;
- to develop skills related the development of the teaching and practical modules by using ICTs;
- to develop competences required for creation of effective training programs in the open information environment.

The specialized course lasts 36 academic hours and involves the use of active teaching methods during lectures, seminars and practical classes: non-imitational (problem lectures and seminars, discussion); simulation (analysis of specific situations and solution of pedagogical problems, the use of software, preparation of assignments, tests, crossword puzzles).

Lecture topics are designed with the view of providing theoretical knowledge on inclusive education and developing practical skills related to the use of ICTs in

primary schools in the inclusive environment. The topics seminars and workshops are devoted to practical skills related to using software and interactive programs at different lesson stages. Table 3 describes in detail topics of lectures, seminars and workshops.

The curriculum includes four modules and a set of topics. Each topic is carefully thought out and described by content and structure of related materials. The actual use of ICTs in inclusive education is formed in compliance with the Kazakh orientation and mentality. Teaching materials were developed by Prof. S. M. Kenesbaev, A. K. Oralbekova, PhD student of the Abai Kazakh National Pedagogical University, Almaty, Republic of Kazakhstan.

Table 3. Specialized course schedule

Item No.	*Names of sections and disciplines*	*Academic hours , total*	*Types of classes*			*Control form*
			Lectures	Independent work with teachers	Practicals	
1	Module 1.					
1.1	Theoretical and methodological foundations and problems of using ICTs in inclusive education of younger schoolboys with disabilities	1	1	1	1	Library-research paper, report
1.2	Historical analysis of inclusive education development	1	1	1	1	Essay
2.	Module 2					
2.1	Readiness of primary school teachers to work under the inclusive education conditions in the Republic of Kazakhstan	1	1	1	1	Presentation
2.2	International experience of using ICTs under the inclusive education conditions	1	1	1	1	Library-research paper, report
3.	Module 3.					
3.1	Classification, selection and application features of assistive technology in inclusive education.	1	1	1	1	Project
3.2	Distance learning for children with disabilities	1	1	1	1	Presentation
	Module 4.					
4.1	Software usage for creating interactive exercises	1	1	1	1	Task project
4.1	Development of ICTs for working with disabled children	1	1	1	1	Practical assignments
	End-of-course assessment					Credit
	Total	8	8	8	8	32

The course syllabus contains a list of materials for each module, reflecting both the Kazakh and foreign experience (national programs, foreign educational portals, public open-access educational resources, public standards, web sites with materials reflecting pedagogical experience, videos, online educational media, network educational communities), which are designed to carry out practical work on the dissemination of these resources and analysis of their integration into the pedagogical practice.

As stated in the course syllabus, specific attention is given to various instrumental programs. This program provides teachers, (in this case – the students of the specialty 5B010200 – Pedagogy and methodology of elementary education), the ability to create interactive exercises and tests for control and self-control students without any knowledge of programming languages and to attract programming specialists. With this program, one can create 10 types of exercises and tests in various disciplines, using texts, graphics, audio and video files.

This specialized course was given during two months in the Abay Kazakh National Pedagogical University. More than 60 students (specialty – 5B010200 – Pedagogy and methodology of elementary education) passed this course and showed good knowledge and practical skills during end-of-course assessment.

The specialized course "Application of information technologies in the work of primary school teachers with disabled children" includes practical activities based on informatization of the Kazakh education. Practicals include relevant tasks and online materials presenting the experience and implementation practice of general trends and international concepts of using ICTs in the Kazakh education. These materials are designed to perform practical work in the form of analysis, critical assessment, identifying and comparing the results of informatization programs implemented in the Kazakh education as well as to identify best teaching experience, to develop personal practice, to promote the development of competencies required to build effective training programs in open-access educational environment.

High level of education demands intensification and interactivity that could be provided by ICTs. The introduction of information technologies in training future primary school teachers promotes faster transfer of large volumes of knowledge as well as the analysis of previous and modern pedagogical experience. Modern ICTs improve the quality of the learning process, since they enhance educational effects of innovative teaching programs and methods. In this regard, the developed course " Application of information technologies in the work of primary school teachers with disabled children" allows training future teachers not only in terms of using ICTs in their future educational activities, but also in terms of education quality improvement in primary schools, especially for children with disabilities.

Thus, the developed training program presented the generalized international experience in the application of information technology in education and teaching methods in primary school under the inclusive education conditions, with resulted in a comprehensive training and development of relevant competences in primary school teachers.

Discussion

As a result of in-depth analysis of the problem, the authors of this research identified the most important task of the special training of general education teachers to work under the inclusive education conditions. These teachers should have special professional competence to teach children with different needs that need to be based not only on the interpersonal relationships and values, but also on the knowledge and competencies that require application of modern innovative technologies.

In this respect, ICTs present the most appropriate tool that not only provides access to information for people with special needs, but also contributes to the realization of their rights in the field of education, employment and participation in

social life and lifelong learning. The application of ICT resources by people with special needs to gain access to education becomes part of the international human rights law. (Dendev, 2013)

Analyzing the evolution of the legal and regulatory framework, the authors of this study systematized the global trends in the implementation of the rights of children with developmental disabilities for the general secondary education in general education institutions, and identified the key role of the teacher in the development of inclusive education. Another question arising in terms of the legal aspects of providing education for children with disabilities is presented by the global and domestic social trends, reflecting social attitude towards persons with developmental disabilities.

The results of this research and analysis of the psychological and educational literature allowed assuming that training the future primary school teachers largely demands the educational and methodological support in terms of using ICTs, which includes a set of basic textbooks, teaching aids, methodological advice, as well as relevant material and technical conditions. At the same time, methodological support aimed at the development of primary school teachers' readiness to use ICTs under the inclusive education conditions should be implemented through system approach, i.e., consistent willingness to develop professional skills under the inclusive education conditions.

The use of ICTs and the development of information competence in primary school teachers predetermine implementation of modern educational technologies into the teaching practice, keeping in mind the education of children with special needs who often face difficulties in communicating, learning and movement.

Modern ICTs provide:

- Development of information competence in students including students with disabilities;
- Implementation of interdisciplinary connections both in learning ICTs-based subjects, and in using ICTs during subject lessons;
- Development of educational, informative and communicative motivation (interest in the subject, interest in communication, increase in self-knowledge and self-esteem);
- Development of student cognitive activity;
- Development of independent work abilities;
- Strengthening student confidence in their own abilities;
- Development of student creative potential;
- Development of evaluation skills in students etc.

The key principle for selecting specific ICT tools is their compliance with respective age levels, limited opportunities and objectives of inclusive education. This approach provides primary school teachers with a useful general framework to develop skills related to the application of the most appropriate ICT tools (hardware or software). General aspects of compliance with ICT tools that are generally suitable for use under the inclusive education conditions are shown in Table 4. Considering the use of ICT tools, a lot depends on the teacher. The teacher chooses ICT tools and software that are most appropriate and useful for the child, studies the chosen material with critical and analytical mind, consciously uses all technical facilities, which should help in the assimilation of relevant material.

Table 4. Relevance of ICT tools and their application aspects in the teaching and learning process

ICT application aspects	*ICT characteristics*
Integration with all types of activity	ICT tools should be integrated with painting, designing, musical abilities, reading, gaming lessons itd
Simple management	Child abilities should be congruent with simple management of ICT tools; they should not be complicated.
Involvement of parents	Parents fully assist in the training and fulfilment tasks by using ICTs

The application of ICTs results in the comprehensive development of students and teachers, the organization of the learning process at a higher technological level, improvement of the education quality and efficiency.

The need to use ICTs in training the future primary school specialists is determined by the fact that ICTs create new opportunities for the teacher in terms of efficient training in order to achieve maximum student performance, educational work planning, which is necessary to conduct and to analyze complex problems keeping in mind inclusive approach to education.

Thus, comparing research results, one can argue that application of modern ICTs in education presents an indispensable component of high-quality education at all levels and in all forms. This conclusion is fully consistent with the presented results, for example, in (Macleod, 2016; Analytical review, 2009; Ateş, 2013; Masarykova, 2013). On the other hand, the use of ICT in training requires special knowledge and skills of primary school teachers. As shown by the analysis of situation in Kazakhstan, training of primary school teachers does not envisage development of teaching competence using ICTs. Therefore, the introduction of the training course discussed in this article, presents a significant result in terms of improving the training of primary school teachers, especially in the context of inclusive education.

Conclusions

New technologies cause dramatic changes in the traditional educational process. Education can no longer be simply a sustainable tradition, compliance with which is necessary for the person only early in life. The use of ICTs leads to the destruction of age, time and space barriers and gives everyone lifelong learning opportunities. Presently, everywhere, under various conditions, people of all ages and backgrounds are constantly learning, creating a learning society of the XXI century.

Numerous studies show that computer-assisted training provides easy access to knowledge, and potentially extends worldview of all learners including children with disabilities. The use of technology can improve skills in a particular field of activity. The purpose of primary school teachers is to address all children, including children with disabilities, and to give them proper knowledge. The end result is the development of skills and abilities that can be used in real world conditions.

The pursuit of inclusive education is the main trend in the educational policy of the Republic of Kazakhstan. Whatever the economic situation in the country, accessible ICTs can significantly expand the rights of children with disabilities, giving them the possibility to attend classes and to explore the world more actively.

Based on the above methods and studies, the authors made the following conclusions:

1. The use of ICTs in terms of inclusive educational process provides the possibility to reduce the speed of information delivery, increasing the distance between students and teachers, as well as audience outreach.

2. The use of ICTs makes it possible to automate a number of time-consuming procedures for checking the completed assignments.

3. The use of ICTs provides a wide range of possibilities when creating individual tasks and exercises, with regard to the different possibilities of students.

4. The use of ICTs significantly reduces the number of problems and difficulties that arise during written work with children having musculoskeletal, speech and hearing disorders.

5. The use of ICTs provides teachers and students with opportunities to communicate with colleagues, friends, classmates, to transfer their learning experiences to other people.

6. One cannot ignore the negative aspects of using ICTs.

In today's world, modernization of the education system for children with disabilities is very favorable, especially as concerns learning and application of ICTs. The future primary school teachers should make full use of the innovative technologies, develop their computer literacy and use their knowledge for the benefit of children. Kazakhstan needs to move "from equal rights to equal opportunities". Overall, the humane society together with humane attitude towards all living beings on the planet presents the very higher education.

Implications and Recommendations

Rapid development of the information society provides new perspectives for people with special educational needs, but at the same time poses a certain threat. While the spread of information technology enhances people's participation in public life, the lack of openness of these technologies contributes to the creation of new barriers, leading to even greater discrimination and exclusion of people from public life.

Most ICT-related studies in the field of education consider issues related to the organization of educational process, establishment of modern ICT-based learning environments and technologies. However, researchers do not consider teacher training, which is crucial in terms of implementing modern educational technologies. ICTs for people with disabilities today present the most appropriate way to adapt to modern society, but the problem lies in the fact that the lack of necessary knowledge and skills among teachers restricts child development and does not provide full implementation of inclusion principles. From this perspective, the proposed training course for primary school teachers, which should include compulsory ICT learning, especially educational ICTs, is important both for practical use in teacher training colleges, and in further theoretical studies related to the relationship between teacher training and further education of children in primary schools.

Further research may focus on the importance of different ICT areas and the required level of competence in training primary school teachers. Besides, important issue involve the introduction of ICTs, the use of modern tools in elementary school,

consideration of computer impact on child health and development of their communication skills.

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Disclosure statement

No potential conflict of interest was reported by the authors.

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