

## UNESCO IITE Contribution to e-Inclusion Policy Development for Education of Students with Disabilities

KOTSIK Boris, TOKAREVA Natalia

UNESCO Institute for Information Technologies in Education (IITE)

[kotsik@iite.ru](mailto:kotsik@iite.ru), [tokareva@iite.ru](mailto:tokareva@iite.ru)

### Abstract

*People with disabilities have the right to expect the same standard of services and equitable access to information and knowledge as every other member of the society. The use of information and communication technologies (ICTs) in education for such students should enhance their independence, integration and equal opportunities in social life. In this connection, new pedagogical approaches must be developed and implemented into educational practice. Following this intention, the UNESCO Institute of Information Technologies in Education (IITE) supports reinforcement of national capacities in ICT policy development for education of people with disabilities. In close cooperation with a team of international specialists UNESCO IITE has developed the specialized training course "ICTs in Education for People with Special Needs", devoted to the issues of general and specific ICT applications in face-to-face and distance education of students with physical, visual, hearing, speech and language, cognitive and learning impairments.*

### 1. Introduction

While modern stage of civilization development is characterized by increasing role of information and knowledge in social life, access to information and quality education for community members determines their opportunities for active participating in civil society, including scientific, economic, political and cultural activities. The right to education has become an essential need and a basic human right, which is crucial to human development. Since the advances in the technological sphere have led to wide diffusion and application of ICTs, the development of the Information Society results in penetrating of technologies in every occupation of social existence, building the global information space.

However, whilst ICTs can be very empowering, providing new opportunities for participation in society otherwise not open to all people, as it can create new threatening barriers, which prevent social inclusion of some groups of citizens. In the first instance such environments affect people with disabilities, which must frequently overcome additional obstacles before they can enjoy the full range of information, services, entertainment and social interaction offered by the ICTs. Such digital divide in its turn, will further intensify social exclusion. Those who are unable to access information in equal conditions run the risk of losing some of their most basic rights. In this connection, overcoming barriers to ICT application for education and communication needs of persons with disabilities is a highly topical problem. If the technology is not adapted to the needs of persons with disabilities, if the principal information is processed in such a way that some groups of people are excluded, the Information Society will become a threat for such people the world over.

There is a growing awareness that people with disabilities have the right to expect the same standard of services and access as every other member of the society. The common principles of this approach were stated in the Geneva Declaration of Principles and Plan of actions on the World Summit on the Information Society by the intention "to build a people-centred, inclusive and development-oriented Information Society, where everyone can create, access, utilize and share information and knowledge, enabling individuals, communities and peoples to achieve their full potential in promoting their sustainable development and improving their quality of life, premised on the purposes and principles of the Charter of the United Nations and respecting fully and upholding the Universal Declaration of Human Rights" [1].

In order to contribute to solution of these issues and provide appropriate conditions for equal access to education for all the UNESCO IITE supports reinforcement of national capacities in ICT policy development for education of people with physical,

visual, hearing, speech and language, cognitive and learning impairments.

Since 1999 within its framework the Institute held a number of international expert meetings and workshops in partnership with well-known experts from 13 countries, including the United Kingdom, the Netherlands, Japan, Australia and the USA. Recommendations of international experts provided the basis for development of information materials and analytical survey *Information and Communication Technology in Special Education* [2], which show the current state, prospects and main trends of ICT application in education and social inclusion of persons with special needs.

This experience enabled the Institute to develop the specialized training course *ICTs in Education for People with Special Needs* [3], devoted to the issues of general and specific ICT applications in education for a wide range of people with disabilities. The course was developed by IITE in close cooperation with a team of international specialists from Italy, Russia, Australia, Denmark etc., headed by Dr Edwards (United Kingdom).

The course will be of interest to a wide range of specialists, involved in education of people with special needs, from high level policy and decision makers to researches, teachers, programme planners and curriculum developers. It offers the opportunities to acquire knowledge and develop practical skills on organizational, pedagogical, psychological, and technological aspects of ICT application in face-to-face and distance education of students with disabilities. Particular emphasis of the course is put on the basic aspects of ICT policy development in special needs education, including promotion of ICT infrastructure, integration of ICTs into curriculum, training and retraining of ICT specialists.

## **2. ICT application for meeting the educational needs of students with disabilities**

The educational needs of people with disabilities are vastly diverse. On the one hand, they must, as their peers, get knowledge and skills required in the society in which they live. On the other, they have (by definition) additional demands (often referred to as special educational needs) caused by functional limitations which affect learners' ability to access standard educational methods of instruction, therefore, prevent educational progress.

ICT application plays an essential role in providing high quality education for students with disabilities.

Being an important element of everyday life, new technologies radically transformed the ways of studying, acquisition of knowledge and skills, interacting with other people. The broad application of new digital technologies has a great potential to modify the educational system and initiates new pedagogical approaches, appropriate for raising demands of the modern society. In the new millennium delivery methods of education based on the application of ICTs have become the most prevalent way of providing the up-to-date information to students in the quickest and most flexible ways possible.

ICTs have been introduced into the teaching-learning process in order to improve quality, support curricular changes, and new learning experiences. In this way it is possible to meet the specific learning needs of different learner groups, including students with disabilities. Technologies provide opportunities for compensation of global and specific physical, sensory, cognitive and other functional limitations and thereby to contribute to realizing students' potential for learning. For some students, a technological solution will be the only way to ensure they can make their needs, opinions and views known. For them, access to appropriate ICT-based solutions is a lifeline to inclusion. The key ways in which ICTs can support educational opportunities for people with special needs are as follows:

- Identifying the preliminary level of personal development (experiences and skills), that is to say the starting point of a student;
- Assisting in personal development by shaping new skills or updating existing ones;
- Improving the access to information;
- Overcoming geographical or social isolation via communication support and networks;
- Improving the image / perception of an area by enhancing motivation and awareness regarding the ICT benefits in education.

The importance of the ICT support in education of such students is that it covers issues that apply to a spectrum of potential learning needs. Though the specific applications of ICTs are extremely diverse and varied they may be grouped into following main categories:

*ICTs for compensation uses:* the use of new technologies as a technical assistance allows students to take an active part in the process of learning and interacting with others. From this point of view ICTs develop the students' ability to control their environment, make choices about their experiences, support problem solving, and thereby enhance access to

information and knowledge. In other words, technology can recoup or substitute the lack of natural functions.

*ICTs for didactic uses:* the use of ICTs as a learning tool has prompted a new dimension of education and has launched the transformation of the educational approaches. ICT application provides a variety of new teaches and assessment strategies for students with different educational needs. In this context information technologies as a didactical tool are suitable for providing inclusive education. In order to enhance personal development, educational initiatives within the inclusive curriculum should be aimed at meeting individuals' unique needs, differences and abilities, and they should be fully supported towards achieving these goals. Information technologies, thereupon, will open a new huge window to minimize differences among students and will become a valuable resource for inclusion.

*ICTs for communication uses:* technologies can improve communication of people suffering from different functional limitations with others both in their immediate environment and around the world. Assistive devices and software meets the needs of students with specific communication difficulties make the communication possible, allowing a person to exhibit his abilities in a more convenient way, show their necessities and make their demands.

Thereby, ICT application facilitates overcoming the barriers to education by offering them multiple means for receiving curriculum materials in appropriate format as well as demonstrating their learning outcomes, enabling them to take an active part in the learning process in spite of their functional limitations.

### 3. ICT policy development for education of students with disabilities

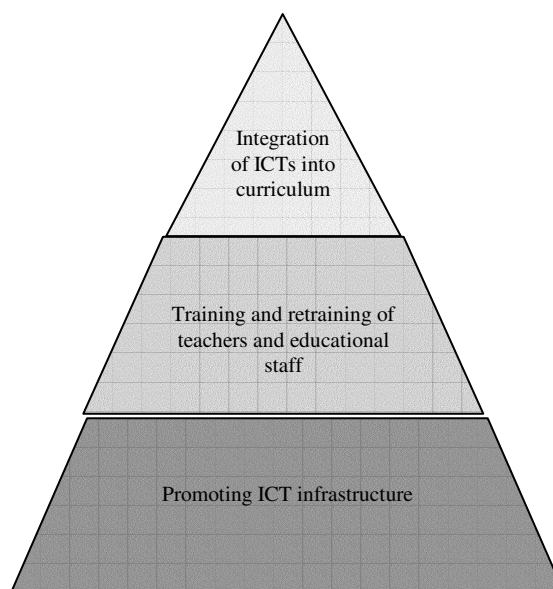
While governments elaborate programmes intending to engage people with disabilities in society and design strategies of their rehabilitation on the principles of *equality* and *non-discrimination*, comprehensive policy initiatives should be focused on the facilitation of *accessibility* of the ICT-mediated special education.

In order to provide equal access to education for persons with disabilities it is necessary to determine barriers they faced which prevent effective acquisition and application of knowledge. Such barriers are caused by a complex of physical, social and economic factors. Following the intation to facilitate the learning process for persons with disabilities and to contribute to the development of their abilities there is a need to provide appropriate conditions for overcoming the barriers to

learning. Creation of such conditions can be attained with a help of ICT usage, which could be considered as a bridge to accessibility of education and has benefits for both the students and the teachers. In this regard, the primary attention of policy and decision makers aimed at provision of accessible education for students with disabilities should be focused on the arrangement of such *necessary conditions* as

- Providing appropriate ICT infrastructure satisfied the principles of usability, accessibility, flexibility, affordability, and cost-effectiveness;
- Training and retraining of ICT specialists in special education, that should satisfy quality standards of professional teachers' excellence (including excellence of special needs teachers), and meet the technology standards of teachers' excellence;
- Modifying of all curriculum components (including methods of creating the content, its delivery and ways of assessment of the students' progress) with due account for educational needs of students.

The figure below illustrates the abovementioned components of the ICT implementation policy.



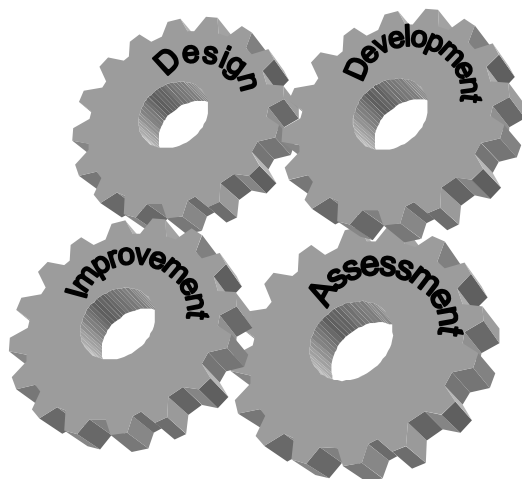
**Figure 1. The main arrangements for ICT implementation in education of students with disabilities**

This process should be also supported by a combination of measures at many levels, including

- Development of legal framework aimed at raising access and quality of education for people with disabilities
- Creation of physical access to and in buildings, including transport and suitable interior design
- Raising awareness of teachers, school / institute staff, parents, and peers regarding a change in culture and their attitude toward students with special needs to be educated within the communities.

In compliance with such vision, policy initiatives must define the ways of ensuring that individuals have access to the equipment and connections needed, and that service providers are encouraged to supply useful and desirable services. The objective to improve educational environments for people with disabilities should be pursued at a national level through the development of clear *strategy* of ICT policy in special education. The strategy implies a plan of action which outlines the primary activities to be undertaken to achieve the policy goals.

In order to integrate successfully ICT-mediated approaches in special needs education, it is essential to develop a comprehensive planning model of the process. Although the models of integration abound, the majority follow the same basic stages of design, development, assessment and improvement (see figure 2).



**Figure 2. Stages of ICT policy implementation in education of students with disabilities**

The above-mentioned stages of ICT policy development assume a diversity of activities to achieve its intentions. However, ICT integration in special

education must be seen as a complex proposition based on the principle that technology is only a tool to shift the focus from technology provision to design of learning environments.

#### **4. Monitoring of ICT usage in education of students with disabilities**

Achieving equal access to ICT-based special education services that satisfy the demands of Information Society may be a challenge without legislation, government funding, or national standards. Furthermore, unambiguous information regarding the strengths and weaknesses of ICT usage in special education should advance technological development as well as the formation and implementation of educational policy in this field. However, information of the correct type, format and focus on different aspects of ICT usage in special education is often unavailable at national and international levels: it may not have been created and disseminated yet.

In this connection, monitoring and evaluation have become the key instruments to uphold ICT policy in special education. Such activities are necessary not only to coordinate and foster policy implementation but to impact the support of human rights for people with disabilities in general.

Monitoring and evaluation has several important *objectives* within ICT policy development:

- Guiding the progress of policy measures.
- Ensuring that policy measures are carried out as planned and that goals are achieved.
- Re-assessing the appropriateness of goals and plans in the light of experience.
- Identifying the benefits and cost-effectiveness of ICT usage in education.
- Guiding future policy trends and measures for improving ICT usage in education.

It also should be noted that the most important objective of obtaining evaluation results is to enable continuous enhancement of ICT policy within the context of special education, and by doing so, improvement of access to education for persons with disabilities. In this regard, it will be expected that the impact of such improvement will depend not only on the obtaining accurate and overall feedback information, but also it will be determined by how such evaluation results can be analyzed and introduced to the policy practice. Careful analysis provides an opportunity to reflect on, and learn from received experience. The process of analysis and interpretation of evaluation results within ICT policy in special

education can be interpreted with relation to the following issues.

- i. *Conformity of ICT policy in education of disabled to clear philosophy of meeting individual learners' needs and fundamental principles of equality and inclusion.*

Policy initiatives in the field of special education is not only about provision of the appropriate and accessible learning environment for students with disabilities, but rather about a fundamental change in the way we view diversity in the classroom and in the broader society. In view of the social trends towards inclusion, policymaking should be focused on identifying and removing barriers to learning and participation. However, barriers go further than accessibility technological barriers, inappropriate content or delivery methods of curriculum, negative attitudes and stereotypes towards new educational technologies and others. Barriers to learning can also arise from socio-economic factors (e.g. lack of funding). In this connection, educational policy should be focused on moving or removing these barriers to establish education for all.

- ii. *Reliability of indicators that reflect development of ICT policy at all educational levels and areas.*

There is a need to promote monitoring and evaluation at all educational levels from pre-school education to higher and vocational education of persons with disabilities. Moreover, in this process all activity areas, including infrastructure development, teacher training and curriculum modification, should be involved.

- iii. *Conformity of ICT policy in education to the local socio-economic context, national and local government policies.*

Development of the ICT policy in education could not obtain its objectives in full without careful consideration of the local conditions, including socio-economic development of the country/region, labour market and demographic information. Moreover, any policy initiations in this field need to be correlated to the relevant national legislation and priorities in general government policy.

- iv. *Capacity of ICT policy in education to improve national/regional educational strategy for education of people with disabilities,*

*developing standards of educational quality and models policy implementation*

International experience demonstrates that most of the fundamental issues regarding development of educational policy, and much less in the field of special education, cannot be resolved in the absence of a continual monitoring of policy achievements. Careful analysis and interpretation of evaluation results can be a power instrument for establishment and revision of clear goals and priorities for reform in education of persons with disabilities on the level of government vision and national education policy.

## 5. Conclusion

Rapid technological development in recent years has made possible a lot of new services and assistive devices which ease the daily life and perfect learning results of people with disabilities. Through profoundly improving the access to information and supporting communication they can become a powerful key - didactic and communication means – which, in turn, would lay the basis for major progress in personal development allowing the participation of people with disabilities in community life. However, insufficient level of infrastructure development, high costs and lack of awareness, knowledge, and skills on appropriate technology applications among the specialists reduces the benefits of technology advances. In this connection, balanced ICT policy will play a major role in maintaining these developments through proactive strategies which will enable the persons with special needs to achieve equal opportunities of their social inclusion.

## 10. References

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