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Supporting Inclusive Education Through ICT Implementation: An Intermediary Role

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Abstract

Access to equal information and knowledge has become a social requirement and a fundamental aspect of human rights. Rapid developments of ICT bear huge potential of improving the quality of education for successful developments of students with special educational needs by advancing their social integration and increasing learning, as well as accessing learning. Moreover, effective use of ICTs can support a high quality training of teachers in the field of special education. The present study addresses the inclusive school principals and special education teachers' attitudes towards ICT in their educational fields. The results show that there is a great need of using ICT learning environments for training school staff and improving the quality of education for disabled children. It is suggested that ICT can play an important role to improve learning quality and develop effective teaching and learning strategies that contribute to disabled children's engagement in their learning process.

"Better learning will not come from finding better ways for teachers to instruct, but for giving the learner better opportunities to construct"

Keywords: Fundamental, potential, environment

Introduction

"Better learning will not come from finding better ways for teachers to instruct, but for giving the learner better opportunities to construct"

The current period of social development is characterized by the mounting role of information and knowledge which are becoming the main factors of the progress and prosperity of society. The development of *Information Society* is having a growing impact on every aspect of people's lives. Information technology becomes more and more accessible in daily life. It changes our society bringing a new cultural environment where information is present in every field. Not only the form of working or doing business is altering radically, but the ways of studying, accessing skills and knowledge, and interacting with other people as well. Over the last decades the tremendous development of ICTs are changing the world and the way education is conducted. It is probably fair to say that the use of ICTs affects every aspect of our daily life.

The impact of ICT in education has its roots back in the 1970s, where the governments in several countries started to realize the need of using technology in order to improve the relevance and quality of education. ICT is considered a mean to bridge the gap between different groups of people such as the group of people with special educational needs. Recently, there has been a growing number of researches that supports the fact that, ICTs and assistive technologies more generally, enable people with special educational needs to lead more

fulfilled lives. Technology can mediate communication between people with disabilities.

The integration of ICT is an important and valuable tool for all students. The use of technological assisted devices and resources allow students with special needs to take an active part in the process of learning through improve access to the curriculum. ICTs develop the students ability to control their environment, make choices about their experiences,

In view of the changed context of Information Society, the demands of education in adapting to new environments have risen. The most important human contribution to society development is its ability to generate new knowledge, to share and distribute it among communities, and to find innovative ways to utilize knowledge to further the prosperity of society. Sharing and strengthening of global knowledge for the sake of development can be enhanced by ensuring equitable access to information for all. In this way, access to quality education for community members determines their chances in scientific, economic, social, political and cultural activities, leading to active participation in civil society.

The term *'special educational needs'* covers a range of problems which can cause difficulties in learning. Even though there have been many definitions over the years, comparative studies show that the term 'special educational needs' can mean different things to different countries. One of the most dominant categorizations that recommend a graduated approach to educating learners in need of special provision is the children with special needs.

Considering a wide diversity of individual learners' capacities, the civil society must find the ways to remove barriers to learning and provide appropriate conditions for equal access to education. Inherent in the development of democracy has been the conception of providing quality education and securing opportunities for lifelong learning for all learners, regardless of their individual background. The inclusion of students who have experienced barriers to learning in mainstream education has become a part of a global movement for human rights. Implementation of the inclusion principle encourages policy- and decision-makers to look at the barriers in education systems: why they arise and how they can be removed.

However, over the past two decades it has become clear that inclusion in a largely unchanged mainstream cannot secure equality and, correspondingly, quality of education for all learners. A more fundamental transformation concerning the creation of appropriate learning environments and pedagogical approaches is required.

ICTs offer a great potential to support lifelong learning for all groups of students, including those who have special educational needs. The application of ICTs must enhance independence, integration, and equal opportunities for such people and in this way will facilitate their inclusion in society as valued, respected, and contributing members.

Why ICT in Special Education?

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.

In this context, ICT application is very important as it plays an essential role in providing high quality education for students with disabilities. 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.

Though specific applications of ICTs are extremely diverse and varied, they may be grouped into the following main categories:

- Compensation uses.
- Didactic uses.
- Communication uses.

With this in mind, the role of ICTs in special education will be described in accordance with the primary categories:

• ICTs for Compensation Uses

That is the use of new technologies as a technical assistance that allows students with special needs to take active part in the process of interaction and communication: if a person has motor disability he may be helped to write, or to read if a person is with a visual deficiency (among many other possible examples). From this point of view ICTs develop the students' ability to control their environment, make choices about their experiences, support problem-solving, give access to information, thereby enhance communication with others both in the immediate environment and around the world. In other words, technology can recoup or substitute the lack of natural functions.

• ICTs for Didactic Uses

ICTs used as a learning tool have prompted a new dimension of education and launched the transformation of the educational approaches. ICT application brings a variety of new teaching and assessment strategies for students with different educational needs. Here we must note that information technologies as a didactical tool are suitable for implementing the inclusive

education. In order to enhance personal development, educational initiatives within the inclusive curriculum must aim at meeting unique needs, differences, and abilities of an individual; hence they must be fully supported to achieve these goals at an appropriate pace. Information technologies, thereupon, will become a valuable resource for inclusion.

• ICTs for Communication Uses

Technologies can mediate communication with people having disabilities (often referred to as *Alternative and Augmentative Communication*). Assistive devices and software to meet the needs of students with definite communication difficulties are specific to every disability. We talk about the computer as a resource that eases and makes the communication possible, allowing a person with communicative disorders to exhibit his/her abilities in a more convenient way, or people with motor and communicative disorders to start communication, show the needs and make the demands. Furthermore, where teachers are in short supply (as in special education) distance teaching methods can help provide special services between geographically dispersed students and teachers.

Supporting Inclusive Education through ICT Implementation

Inclusive education presents an opportunity for students with special needs to attend mainstream classrooms with their age-group peers. To realize this we need to provide for the relevant conditions of overcoming the barriers to the learning process. Particularly speaking, these conditions are attained via the facilitation of ICT infrastructure for SNE, integration of ICTs into SNE curriculum and training of ICT specialists in SNE.

Promoting ICT infrastructure for SNE is necessary in order to provide for the appropriate conditions of teaching and learning in the SNE context. The conditions in every type of inclusive educational area cannot be successfully created without the appropriate ICT tools applied. Assistive tools must be used to allow students with SEN to participate in the educational process based on special techniques and equipment.

For some students, a technological solution will be the only way to ensure that they can make their needs, opinions, and views known. For them, access to ICT-based solutions is a lifeline to inclusion. ICT support in inclusive education is important because it covers issues that apply to a spectrum of potential learning needs.

The key ways in which ICTs can support educational opportunities for people with SEN 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 SNE.

General ICT benefits:

- Enables greater learner autonomy;
- Unlocks hidden potential for those with communication difficulties;

- Enables students to demonstrate achievement in ways which might not be possible with traditional methods;
- Enables tasks to be tailored to suit individual skills and abilities.

ICT benefits for students:

- Computers can improve independent access for students with special needs (Moore and Taylor, 2000; Waddell, 2000);
- Students with special educational needs are able to accomplish tasks working at their own pace (ACE Centre Advisory Trust, 1999);
- Visually impaired students using the internet can access information alongside their sighted peers (Waddell, 2000);
- Students with profound and multiple learning difficulties can communicate more easily (Detheridge, 1997);
- Students using voice communication aids gain confidence and social credibility at school and in their communities (Worth, 2001);
- Increased ICT confidence amongst students motivates them to use the Internet at home for schoolwork and leisure interests (Waddell, 2000).

In conclusion, we must stress that there exists a considerable potential in the educational uses of ICTs alongside with many challenges and dangers. New technologies can provide the means to explore new forms of learning that break the traditional hierarchies of educational systems and develop genuine alternatives to rigid, passive approaches to learning of people with SEN. However, these technologies can turn up as obstacles to education if they are applied without a commitment to the principles of equality, participation, and responsibility.

Key Terms

Information and Communication Technology: ICT refers to technologies that provide access to information through telecommunications. It is similar to Information Technology (IT), but focuses primarily on communication technologies. This includes the Internet, wireless networks, cell phones, and other communication mediums.

Special Education Needs (SEN): Special educational needs cover a range of problems which can cause difficulties in learning.

Digital divide: A term which refers to the gaps between those who can effectively use new information and communication tools, such as the Internet, and those who cannot.

Digital inclusion: Several initiatives that work socially and technologically in order to reduce the existing gap in access to information and communication technologies and networks for people with special needs.

Information Age: The period of social development when the production of information is more important than the production of physical goods; the service sector is much larger than the manufacturing sector.

Information Society: Characterizes the level of community development being formed as a result of the fusion of information, media and telecommunications including far-reaching organizational and institutional changes in all aspects of human activity (e.g. workplace, leisure, shopping, commerce, education).

Summary

- The current period of educational system development is characterized by the increasing role of ICTs which have become an important new component of the curriculum, adding a valuable set of new resources and didactical tools suitable to support the learning process.
- Speedy development of the Information Age brings people with special needs a danger of losing their most basic rights, caused by new threatening barriers.
- In order to exploit the whole potential of the ICTs to provide for the equality, it is necessary to understand the barriers to learning faced by those who are seen to have SEN.
- Barriers to learning prevent students from getting sufficient level of knowledge as well as from giving a teacher a true evaluation of the students' competence. Though the applications of ICTs in education of people with special needs are extremely diverse, there are three main areas for their use – compensation uses, didactic uses, communication uses.
- In order to implement inclusion in education there is a need to create appropriate conditions for students with SEN.
- The achievement of conditions for successful inclusion in all areas of education can be realized by means of providing for appropriate technological infrastructure, modification of the curriculum, and training of new specialists in special education, capable to use ICTs.

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