ICT Eases Inclusion in Education

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INTRODUCTION

Access to education was defined as a fundamental human right in the framework of the Declaration on the Human Rights from 1948. However, the World Report on Disability written in 2011 by the World Health Organization and the World Bank estimates that there are between 93 and 150 million school-aged children with disabilities around the world (UNESCO, 2014). Unfortunately, the fact is that many of these children are completely excluded from educational opportunities, even primary education. Also, because of their learning difficulties, great numbers of children do not have equal access to education.

The inclusion of children with special needs in regular classes creates an entire range of challenges within a given school system and requires the application of new methods and forms of work that are appropriate to each child.

Information and Communication Technologies (ICT) should be increasingly involved in the educational system to improve the quality of teaching, and to provide new experiences during the teaching and learning processes. In this paper term ICT covers all the technologies used to communicate, create, store and manage information. With use of ICT it becomes possible to meet the specific needs of different groups of students, including students with special needs. For students with special needs, ICT can offer numerous ways to remove obstacles as they try to participate in the teaching and learning of the curriculum.

This chapter presents brief analyses of different supportive technologies, such as hardware and software solutions, Web 2.0 technologies, virtual learning environments (VLEs), virtual worlds, and other similar technologies. The aim of this chapter is to show the potential of ICT in education, especially when facilitating student inclusion. This chapter will also stress some open issues, including limitations in interactions, communication, and learning. ICT can provide new opportunities in inclusive education, and despite all of its potential limitations, ICT should be considered as a key tool to promote equity in educational opportunities.

BACKGROUND

In this paper, the definition of inclusive education, as set out by UNESCO, is adopted: *Inclusive education is a process of strengthening the capacity of the education system to reach out to all learners... As an overall principle, it should guide all education policies and practices, starting from the fact that education is a basic human right and the foundation for a more just and equal society* (UNESCO, 2014, p.11). Coupled with the process of inclusion, the term "special educational needs" (SEN) is often used across Europe. This term is frequently adopted to specify *learners who encounter barriers to learning, either temporarily or in the long term* (EADSNE, 2013, p.6). This definition stresses that the term SEN covers not just learners with disabilities, but all learners who, for various reasons, do not make expected progress for their age. According to this concept, learners with SEN comprise a wider group of students than those with disabilities alone and there are some estimates that these individuals account for around 20% of the school-age population (EADSNE, 2013, p.6).

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ICTs that are used to support children, young people, and adults with disabilities, are commonly referred to as assistive technologies (AT), although there is no one single internationally accepted definition for this term. The British Assistive Technology Association (BATA), a social enterprise that focuses on AT for inclusion in education, defines AT as *any item, equipment, hardware, software, product or service which maintains, increases or improves the functional capabilities of individuals of any age, especially those with disabilities, and enables them more easily to communicate, learn, enjoy and live better, more independent lives* (BATA, 2015, para.2). In this chapter, the BATA definition of AT is used.

Research into assistive learning technologies has grown significantly in the last decade. Today, research into specific topics can be found in many books and journals worldwide and is the focus of many specialist publications from a variety of disciplines. As such, including all research related to ICT – or, more precisely, to AT – in this short review is in the advance lost battle. Therefore, this review should be understood simply as the author's own choice of sources related to research on ICT in inclusive education, mostly from last five years.

Recent researches have shown that ICT, in its various forms, is decreasing the gap in education and enabling the inclusion of students with special educational needs in classrooms with their classmates; furthermore, AT help students largely reach their educational goals (Brodin, 2010). Several studies point to the idea that ICT could help SEN students, particularly students with reading and/or writing disabilities, through word processors, word prediction programs, spell and grammar checks, voice recognition, text-to-speech (TTS) programs, planning and organizing tools, etc. (Anderson et al., 2009; Maor et al., 2011; Peterson-Karlan, 2011).

Also, a number of studies have shown that all teachers should be familiar with the use of ICT for SEN students because students who benefit from ICT can be found in every classroom (Anderson et al., 2009; Starcic, 2010). According to the parents in Brodin's (2010) study, ICT was used only to a limited extent, and they complained about the teacher's lack of knowledge about ICT use and tools.

In the last few years, the term "accessible technology" has been adopted to define technologies designed to allow learners to use mainstream technology without any disadvantages, as opposed to AT, which specifically support SEN learners (Barres et al., 2013; McKnight & Davies, 2012). Of course, between those two technologies, considerable overlap exists. Namely, ICT developers apply inclusive design approaches, so their technology can be used instead of AT; using *methods designed to make technologies or information accessible, therefore may be counted as assistive technology approaches, as the approach is assistive, even if the technology is not necessarily so* (McKnight & Davies, 2012, p.13).

ICT SUPPORT FOR INCLUSIVE EDUCATION

The implementation of inclusive education within the regular school system involves a number of activities that take place throughout the entire school practice of all of its participants. The inclusion of children with special needs in regular classes requires the application of new methods and forms of work appropriate to each child (Gašpar & Vetma, 2014). This process is, by itself, very complex and its results are usually not instantly visible. ICT support could ease that process for all stakeholders and make the results more visible. When inclusive education is in question, all aspects of the use of ICT become important. ICT could provide SEN students with the following key inclusive benefits (Winter & O'Raw, 2010, p.87):

- Better control over their own learning experience.
- Students can participate and contribute more fully in classroom activities, and they can also complete assignments independently.