

Chapter 43

The Use of New Technologies to Improve Attention in Neurodevelopmental Disabilities: New Educational Scenarios for the Enhancement of Differences

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ABSTRACT

The aim of the work is to present the potential use of various technologies in special needs teaching, demonstrating how their use may enhance some basic learning processes in individuals with disabilities. A detailed analysis of national and international literature revealed that most studies have demonstrated that ICT use plays an important role in supporting students with intellectual disability. This article presents two studies. The main objective was to study the role of eye-gaze digital games to improve attentional and motivation abilities in two groups: girls with Rett Syndrome (RTT) and children with Attention-Deficit Hyperactivity Disorder (ADHD).

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1. INTRODUCTION

Our work deals with the use of ICT, a subject that has become part of everyday language in this field. However, it always activates reactions and defense as well as excessive enthusiasm which often prevent us from considering its strengths and weaknesses.

New technological tools bring about new ways of knowing and communicating, but their use and/or concrete application requires solid, multiple and interrelated skills. The lack of such skills can generate frustrations in the disabled person. Parents who hope in magical solutions or have high expectations can misunderstand the fact that their children need holistic inclusive design and that technological benefits are only part of the therapeutic / facilitative process (Morrison, 2016).

For this reason, the issue requires an in-depth reflection of the studies on the use of ICT for the disabled. Technology must be evaluated in terms of its effectiveness and proven track record at producing a better quality of life, but also for greater operability within special needs teaching so that it becomes more accessible. It must be aimed at enhancing the potential of everyone; provided that the analysis that results from the dynamic interaction between user, technology and environment is the only one capable of indicating what to choose to enhance skills and functions.

A reflection on operability (a dimension that could be called politics) is necessary to call attention to the possibilities of tools and languages (technology used as mediation devices) to perform important symbolic functions for production, fixation, circulation of meanings in the direction of ‘breaking down of barriers, of any kind’ (WSIS World Summit on Information Society, 2010).

New forms of social participation are needed (consider the underlying philosophy of inclusion) that involve minorities in the construction of a fairer, more cohesive and supportive global society which is more inclusive, where every form of discrimination and marginalization is banned (European Commission, Horizon 2020 program). This means that all social structures should expand the capabilities of the person, his/her liberties (opportunities) towards the achievement of the ‘beings and doings’ which they value (Campbell, Stramondo, 2011; Murdaca et al., 2014).

It is well known how much the systemic relationship between inclusion and well-being is founded on the central affirmation of the ‘capability approach’ and to which every type of technological device should tend, provided that it is true that each person has the right to participate in the development of his/her abilities but it is also true that these systems have been developed to respond to diversity in order to give equal rights and values to all.

And this principle of inclusion can only be substantiated by the objective to promote equity in educational opportunities.

In this process, the use of technology is not an end in itself but a means to support the development opportunities of disabled individuals, bringing a radical change in the cognitive approach to reality. These individuals must participate in a serious project; in short, if they do not utilize well-constructed educational technology, teaching effectiveness cannot be guaranteed (Galliani 2003).

2. TECHNOLOGY DEVELOPMENT: NEW TRAJECTORIES TOWARD CHILDREN WITH SPECIAL NEEDS

The use of technology for people with special educational needs has now become essential, given the high index of usage, which today is increasingly linked to the characteristics of accessibility as defined

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