Mental Retardation and Learning Integrating Skills: Application of Didactic Software

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ABSTRACT

Studies have highlighted the importance of using new technologies during the planning of educational and didactic paths to develop skills and functions in disabled patients (Bruschi, 2001). Assistive technologies represent real opportunities of e-participation to social life (Calvani, 2011; Chiappetta Caiola, 2009), which also works as scaffolding to promote developing processes (Cooke & Husey, 2002). The authors’ contribution examines the importance of technologies in supporting subjects with mental retardation. It shows the usability of many inputs that offer disabled patients the possibility to exercise cognitive styles, their own characteristics and their own autonomies to increase motivation and self esteem. The aims of this research are a) verify the effectiveness of didactic software based on Precision Teaching method; b) verify gender differences. For this study 40 children have been selected (20 boys and 20 girls) with and without mental retardation. The research consisted of 3 phases: pre-training phase, training phase and post-training phase. Results show learning improvements in each group; in spite of students’ difficulties, the use of Precision Teaching has reduced significantly the initial cognitive gap, which refers to the number of correct responses (accuracy) and to time of response (fluency) relative to the learning of how to use money.

Keywords: Didactics, Disability, New Technologies, Personal Autonomies, School

1. INTRODUCTION

The technological revolution is tied to the increasing use of computer and to the netsurfing (Maraglino, 2007). Basic tools and computer applications are increasingly being used in society and the economy, and the individual digital competence become essential life skills. It involves the majority of population and it modifies people’s habits at work, at home, at school (Rivoltella, 2005; Rivoltella & Ardizzone, 2009). The ways of working, studying, communicating, accessing information are changing with rapidity. Through digital and social technologies people can access resources, interact, and share with others globally (Mur-
daca, Cuzzocrea, Conti, & Larcan 2011) and these can support work and learning. Nevertheless, there is still digital participation gap that is not just in terms of access to computers and the internet but also by the effective use of educational software.

Digital literacy provides new support systems for patients with special needs, parents with children with mental disabilities, or people in rehabilitation. Increasing the use of computer resources in therapy and learning activities is very important to guarantee a better life quality. It is amply demonstrated that children found very attractive and they proved cognitive acquisitions when using educational software.

Even the educational institutions use technology extensively in the education field but also for research and distance learning, in order to enhance students’ skill and improve their academic performances (Gülbaşar, 2007; Kim & Hannafin, 2011). In this regard several researches studied students’ behaviour (Schumacher & Moraham–Martin, 2001) and gender differences (North & Noyes, 2002) in relation to new technologies. It seems, in particular, that boys prefer study using their personal computer more than girls do; they consider this learning modality more satisfactory and more useful than traditional ones (Badagliaccio, 1990; Shashaami & Khalili, 2011).

Further studies with disabled subjects have underlined the valences the computer assisted learning as it offers a multidimension learning, attractive, concentric and dynamic, underlining the contribution of technologies in rehabilitation of disabled children (Gelati, 2004; Cairo, 2007) and focusing the attention on software’s effectiveness. In fact, increase motivation, attention and self-regulation in children with mental disabilities by computer support is one of the best ways to ensure a higher study interest, attention and motivation to learning (Moreno & Mora, 2001).

In this direction, the main interest of special didactics and educational psychology is focused on the analysis of the impact that these software have on disability and new skills learning (Mechling & Gast, 2003; Cottini, 2007). For these reasons, this research underlines the effectiveness to introduce educational software in special education areas as an important aspect of rehabilitation training. Their great benefit is that they are accessible to the nonprogrammer teachers. On the other hand, educational software can help teachers to better guarantee digital literacy development by computer assisted learning.

The learning process especially in patients with intellectual disabilities is very limited by the presence of several deficits: deficits of attention, perception and elaboration of the information. There are also problems of memory and social and physique limitations. All these elements limit the benefits of the traditional educational practices (Parette, Hourcade, & Heiple, 2000). In order to solve out these problems, for several years now, many specific educational programs have been tested thanks to special software (Shimizu, Yoon, & McDonough, 2010).

The use of pc, in patients with mental retardation, seems to increase their independence, their self-regulation, their self-determination, their effectiveness and, in general, their performance. The personal computer is used in the professional education field for the acquisition of language (Holzberg, 1995), for the money management (Ianes, Celi, & Matassoni. 2001), in motivational field (Keyes, 1994) and in many other fields. Sometimes the effects can be amazing.

In educational field, the effectiveness of the use of machines and technological programs, brought the scholars to focus their attention on the “best method” to increase and maintain the learning of some specific skills, especially in disadvantaged patients. Among all the programs tested, the cognitive-behavioural ones are applied to the increase of integrating skills with the best results. In fact, these programs show their effectiveness short-term and long-term.

In particular, thanks to special techniques of behaviour modification and hierarchical organization of contents, it was possible to teach to patients with mental retardation how to use mobile phones in danger situations (Taber,
Learning Applications for Disabled People
www.igi-global.com/chapter/learning-applications-disabled-people/68498?camid=4v1a

Tablet English: Student Perceptions of an iPad-Based Digital Literacy Curriculum
www.igi-global.com/chapter/tablet-english/188945?camid=4v1a