Chapter 23
Experiences Using Information and Communication Technologies with Children Affected by Cerebral Palsy

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ABSTRACT

Intervention using the New Technologies in children suffering from Infantile Cerebral Palsy (ICP) is aimed at attaining or promoting individual abilities of each user. To this end, all possible means and resources are facilitated to enable them to access communication and thus to attain higher levels of social integration and individual advancement for their personal development. One such resource is In-TIC, assistive software for the creation of virtual keyboards customised to the capabilities of each individual user. The experience gained from the application of this software, in combination with assistive hardware, has made it possible to facilitate and improve the access to and use of computers for children suffering from infantile cerebral palsy in the ASPACE Coruña Centre.

INTRODUCTION

Infantile Cerebral Palsy encompasses a range of chronic diseases arising from a lesion or defect in the development of the immature brain; i.e. it is fundamentally a neuromotor disorder (Madrigal Muñoz, A, 1998). It is characterised by alterations in the neuromuscular, musculoskeletal and sensory systems, being the direct result of the physiopathology, or of indirect compensations,

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and which thus limit activity (Piñeiro, M, Vizcaya, Y, Pérez, MJ, 2008).

In addition to affecting motor capacities, ICP is frequently accompanied by sensory, cognitive, communicative, perceptive and behavioural disorders and/or epilepsy (Confederación ASPACE, 2007). In addition to these purely physiological and anatomical complications, the symptomatology in this type of illness may have a series of consequences in the principal contexts of the individual, particularly in the social and cultural ones. This disorder is one of the most common causes of disability in infancy (Chia-Ling Chen et al., 2006).

Among the secondary difficulties, which are particularly relevant for contextualising the subject matter of the present chapter, we should point out the associated communication and learning disorders, and the effects on primary motor capacities.

The communication problems of individuals affected with ICP may be due to a low intellectual level (which hinders the development and acquisition of basic communicative patterns) and/or to difficulties in the articulation of words (dysarthria) (Madrigal Muñoz, A, 1998). Some users are capable of verbal communication, in some form (Confederación ASPACE, 2007), while others benefit from assistive technology through the use of augmentative and alternative communication systems (AACSs), such as communicators, tablet PCs or specific proprietary software.

ASPACE Coruña is the Association of Parents of Persons with Cerebral Palsy, a non-profit-making organisation working in the local setting, whose mission is to promote the establishment of rehabilitation and pedagogical centres and institutions for the recovery, teaching and psychological/educational treatment of children suffering from ICP who are affected physically and/or psychologically (ASPACE Coruña, 1978).

ASPACE Coruña has been present in this field for over 30 years, working constantly with a group of individuals suffering from infantile cerebral palsy and their families.

This organisation offers its services and treatments to individuals suffering from ICP within centre itself, which houses specialised installations. All users of this resource have serious sensory and intellectual handicaps. In practical terms, the 91 users of the centre all suffer from a significant reduction in their personal autonomy as, owing to a diminution in their organic and functional capacity, they are totally dependent for satisfying their basic needs. In the majority of cases, this dependence approaches 99%, as borne out by their disability certificates.

A New Technologies Department has recently been established in the ASPACE Coruña Centre, the principal aim of which is to provide users with the possibility of acquiring, promoting or improving linguistic, communicative, learning and socialisation abilities, all through the use of assistive technology, specific hardware and modern computer tools.

The core theme of this chapter deals with the experiences derived from the application of In-TIC software with users of the ASPACE Coruña Centre, and with the development of a work dynamics in the New Technologies Department. The principal aim is to provide access to and use of computers and of the most dynamic AACSs to the affected individuals.

BACKGROUND

Children with severe physical handicaps require special devices to help them perform their everyday activities, such as personal hygiene, travel, communication, controlling their environment and the use of computers (Hawley MS, Cudd, P.A. and Cherry, A.D, 1994). Consequently, this gives rise to the need for many different types of assistive technology, a basic tool for promoting the personal autonomy of these users.