# Chapter 40
# Enhancing Autonomy in Persons with Intellectual Impairments by Means of ICT Tools

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## ABSTRACT

*This chapter presents an experience carried out in an occupational center from the south of Spain, in which a formal research was essayed related to the use of Information and Communication Technologies (ICTs) by persons with a variety of intellectual disabilities as a mean for increasing their autonomy in Activities of Daily Living (ADL). An accessible and friendly interface was designed to make the use of the computerized training program as easy and attractive as possible. The use of this program was monitored and the perception of changes in the execution of ADL was rated both by the supervisors at the occupational center and by the families or tutors of the subjects. The authors measured an increase of up to 10% in autonomy in some categories of ADL, proving the free online software they designed for the training program to be effective.*

## BACKGROUND

Computer programs have become a common tool for education and training, as they might be appealing for the users, and allow tracking results and providing a pace of training that can be adapted to the learning curve of the subject. In the case of adults with Intellectual Disabilities (IDs) (van Schrojenstein, 1997), some computer games (mostly those intended for kids) and, in few cases, commercially available programs have been used in occupational centers. This use might

bring some benefits, mostly providing entertainment to the users and familiarizing them with the use of computers.

## The Case of GRADIOR

The GRADIOR software program (Franco-Martín, 2001) is a production of the Foundation for Research and Treatment in Mental Health (spanish "Fundación Investigación y Tratamiento en Salud Mental, INTRAS"). INTRAS is a non-profit, non-governmental organization established in august of 1994 as an initiative of a group of professionals seeking a quality research and intervention in socio-sanitary groups, which found in the third sector a way for social and economical development and for the enhancement of quality of life for most disfavored people.

The main goals of the INTRAS foundation are the development and promotion of activities oriented to assistance, research, and action sponsorship in the socio-sanitary environment. This foundation has developed applications in the scope of new technologies for socio-sanitary environment, as the program GRADIOR, which is a computer software tool, easy to use, and intended for assisting professionals in brain training and rehabilitation of cognitive functions (Ginarte-Arias, 2002) as attention, memory, perception, calculation, etc, in people suffering from dementia, schizophrenia, cerebral palsy, mental retardation, etc.

The GRADIOR software is a tool very adequate for clinical intervention:

- Adequate for a considerable number of users, adaptable to each specific need.
- Includes new advances (a telematic system), and is constantly updated (increasing the number of exercises available).
- It allows running a cognitive rehabilitation program without the need for daily intervention of a specialist.

- It is useful for the therapeutic objectives on purpose: stopping cognitive declination and recovering superior cerebral functions.
- Proved optimal interaction between the system and the user.

In this case, we could consider GRADIOR as our main competitor, or the development in the state of the art that, at least in the Spanish environment, which is closer to our objectives. However, as detailed next, this program doesn't fulfill our requirements.

## Gradior vs. TIC-Capacitados (Our Proposal)

- Our software interface provides a more comfortable and friendly screen design.
- The composition of tests for Gradior results visually more "noisy", as it shows a considerable amount of options.
- Both programs use dual input: tactile screen and computer mouse, to interact with the user. Both also provide visual and audible feedback.
- Our program provides stimulation for the users with a variety of methods.
- As Gradior does, the program has big sized buttons to ease clicking on the answer.
- Gradior uses a set of uniform drawings or pictograms, while our software can provide pictures, images, pictograms, etc.
- Gradior, as an installable executable program, imposes technical requirements for running on a given machine. Our program is a Web-based application, so technical requirements are minimum, and no installation process is required.
- Additionally, our software allows a given user the execution of exercises from any location and platform (PC, tablet, smartphone), just by accessing the URL http://www.ticcapacitados.org (Ticcapacitados, 2011).

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